

SOUVENIR

MATHEMATICS TRAINING AND TALENT SEARCH PROGRAMME

SKILL BUILDING IN HIGHER MATHEMATICS SINCE 1993



M.T.T.S. I'mproving Myself

Interactive Sessions



Group Discussions



Self-Introspection



Seminar Presentations

SUMMER CAMPS 2024

CENTRAL UNIVERSITY OF TAMIL NADU (20 MAY TO 15 JUNE 2024)
INSTITUTE OF CHEMICAL TECHNOLOGY, MUMBAI (20 MAY TO 15 JUNE 2024)
SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY, SIKKIM (27 MAY TO 22 JUNE 2024)

FUNDED BY: NATIONAL BOARD FOR HIGHER MATHEMATICS

MTTS Trust

Since the inception of the MTTT programme in 1993, under the leadership of its founder, and current Director, Prof. Kumaresan, it has not only improved itself throughout its journey, but has also grown tremendously with addition of a number of associated programmes for students and teachers. Its InitMath programme, which is meant for students, PTMT camps, catering to a large number of college and university teachers, the online annual six simultaneous OFCM camps and the very recently started Overture camps, have helped MTTT to reach the farthest corners of the country.

After running the MTTT Programme with a small group of committed mathematicians for about two decades, Prof. Kumaresan formed a National Core Committee to make decisions and execute all matters related to MTTT. On the occasion of the silver jubilee of the MTTT Programme, the members of the core committee formed a non-profitable educational trust, entitled "MTTS Trust" to carry forward this endeavour of MTTT. The Trust was registered in December 2016, and since 2018, all the programmes under the MTTT umbrella are being conducted by the MTTT Trust.

The objectives of the MTTT Trust include the following:

- To continue organizing camps presently being organized under the MTTT umbrella and any other training camps as deemed necessary or important for the country to keep its eminence in higher mathematics.
- To provide training in mathematics to students and teachers of colleges and universities in India, promote higher study and research in mathematics, mathematics education, its allied subjects, and their applications.
- To bring out lecture notes/textbooks of high quality in any branch of mathematics.
- To help any organization or academic institution in India to organize such programmes in line with the objectives of the trust.

The present composition of the MTTT Trust is as follows:

Trustees	1	G. Santhanam (President)	gsanthana@gmail.com
	2	Ajit Kumar (Managing Trustee)	ajit72.training@gmail.com
	3	B. S. Upadhyaya	upadhyayabs@gmail.com
	4	Bhaba K. Sarma	bhabasarma@gmail.com
	5	Vishnu Namboothiri K	vishnu.mtts@gmail.com
	6	D. Sukumar	sukumarmtts@gmail.com
	7	P. S. Srinivasan	pssrinimaths@gmail.com
Invitees	1	H. Ananthnarayan	ananth.mtts@gmail.com
	2	A. Chandrashekharan	chandru1782@gmail.com
	3	A. Satyanarayana Reddy	satya8118@gmail.com
	4	Vikram Aithal	vikram.aithal@gmail.com
	5	Dharmatti Sheetal	sheetal.dharmatti@gmail.com
Former Members	1	S. Kumaresan (Founder President & Former Trustee)	
	2	A. J. Jayanthan (Former Trustee)	

Any query regarding the Trust or suggestion to the Trust may be posted to the Managing Trustee.

MTTS Venues (since 1993)

InitMath, PTMT, and Summer Camps

Online MTTS Camps:

- 8 MTTS Summer Camps
- 24 OFCM Camps
- 3 InitMath Camps
- 15 Online Short Courses
- 2 Online Lecture Series



Programmes conducted during 2023-24

Sl No	Programme	Venue	Region Covered	Dates
1	MTTS2023 Summer Camp (Level O, I and II)	IIT Madras	All India	22 May - 17 June 2023
2	MTTS2023 Summer Camp (Level O)	IIT Mandi	All India	22 May - 17 June 2023
3	MTTS2023 Summer Camp (Level O)	IIT (ISM) Dhanbad	All India	29 May - 24 June 2023
4	Online Short Course in Linear Algebra	Online	All India	10 - 17 June 2023
5	InitMath Jammu & Kashmir	JKIMS, Srinagar	Jammu & Kashmir & Neighbouring States	11 - 18 July 2023
6	PTMT Jammu & Kashmir	JKIMS, Srinagar	Jammu & Kashmir & Neighbouring States	17 - 18 July 2023
7	OFCM2023 Group 1 to 6	Online (6 Parallel Camps)	All India	20 Aug - 2 Sept 2023
8	InitMath Madhya Pradesh	Dr. Harisingh Gour Vishwavidyalaya, Sagar	Madhya Pradesh, Chhatisgarh & Neighbouring States	4 - 9 Sept 2023
9	InitMath Himachal Pradesh	Sidharth Govt. Utkrisht College, Nadaun	Himachal Pradesh & Neighbouring States	9 - 14 Oct 2023
10	PTMT Tamil Nadu	Central University of Tamil Nadu, Thiruvarur	Tamil Nadu & Neighbouring States	11 - 16 Dec 2023
11	MTTS2023 Followup	Bhaskaracharya Pratishthana, Pune	All India	19 - 24 Dec 2023
12	InitMath Assam	Tezpur University	All State in the Northeast Region	3 - 8 Jan 2024
13	InitMath Jharkhand	Indian Institute of Technology (ISM) Dhanbad	Jharkhand, Bihar & Neighbouring States	19 - 24 Feb 2024
14	InitMath Punjab	Akal University, Talwandi Sabo	Punjab & Neighbouring States	19 - 24 Feb 2024
15	PTMT West Bengal	Ramakrishna Mission Vivekananda Centenary College, Rahara	West Bengal & Neighbouring States	4 - 9 March 2024
16	InitMath Kerala	St. Joseph's College, Irinjalakuda	Kerala & Neighbouring States	11 - 16 March 2024
17	InitMath Uttarakhand	Ram Chandra Uniyal Govt. P. G. College, Uttarkashi	Uttarakhand & Neighbouring States	11 - 16 March 2024

Overture programmes during 2023-24

S. No.	Programme Dates	Programme held at
1	18-19 Sept 2023	Idhaya College for Women, Kumbakonam, Tamil Nadu
2	21-22 Sept 2023	The Standard Fireworks Rajaratnam College for Women, Sivakasi, Tamil Nadu
3	22-23 Sept 2023	Deva Matha college, Kuravilangad, Kottayam, Kerala
4	26-27 Sept 2023	Vellalar College for Women, Erode, Tamil Nadu
5	27-28 Sept 2023	Nar Bahadur Bhandari Government College Tadong, Sikkim
6	29-30 Sept 2023	Poornaprajna College Udupi, Karnataka
7	29-30 Sept 2023	St. Teresa's College, Ernakulam District, Kerala
8	5-6 Oct 2023	Tara Government College, Sangareddy, Telangana
9	5-6 Oct 2023	Fatima Mata National College, Kollam, Kerala
10	6-7 Oct 2023	Larambha College, Larambha, Bargarh, Odisha
11	6-7 Oct 2023	RK Mission Vivekananda College, Mylapore, Chennai
12	6-7 Oct 2023	Patna Women's College, Patna, Bihar
13	9-10 Oct 2023	DHSK COLLEGE, Dibrugarh, Assam
14	14-15 Oct 2023	Karanjia Autonomous College, Karanjia, Odisha
15	16-17 Oct 2023	Sri GVG Visalakshi College for Women, Udumalpet, Tamil Nadu
16	26-27 Oct 2023	Nadar Saraswathi College of Arts and Science, Vadaputhupatti, Theni, Tamil Nadu
17	1-2 Nov 2023	B. Borooah College, Guwahati, Assam
18	4-5 Nov 2023	M. L. K. (P.G.) College, Balrampur, Uttar Pradesh
19	17-18 Nov 2023	Jorhat Institute of Science and Technology, Jorhat, Assam
20	27-28 Nov 2023	PSGR Krishnammal College for Women, Peelamedu, Coimbatore, Tamil Nadu
21	28-29 Nov 2023	ABN Seal College, Cooch Behar, West Bengal
22	8-9 Dec 2023	V.P. & R.P.T.P. Science College, Vallabh Vidyanagar, Gujarat

*"I keep six honest serving men
They taught me all I know,
Their names are what and why and when
And how and where and who."*

- Rudyard Kipling

Message from Director



We keep hearing that the twenty-first century is the century of knowledge. Everybody is keen that critical thinking should be inculcated among youngsters. New Education Policy wants this to be a core subject in BS. What is Critical Thinking? If you go through the numerous articles/ books and sift through much jargon, you will find that everything boils down to the Art of Asking Questions! Everything else flows from this.

MTTS Programme, from its inception, has been training

young minds of our country in the art of asking questions. In fact, two decades ago, we started using the fancy phrase “Critical Thinking”. Later, we even included a one-page DIY summary in the Souvenir. We use mathematics as a medium to encourage critical thinking in young minds. We believe that if critical thinking is taught as an abstract set of principles, it may not achieve its purpose. But if it is taught in the context of a subject, you see the principles in action and retain the principles for future use.

What can you expect in an MTTT camp? First and foremost is that a typical session of an MTTT camp is nothing you would have experienced in a classroom back home. The teacher keeps on asking questions, makes you think and encourages you to come up with your own answers. Slowly you will also start enjoying these interactive sessions, and come up with questions on your own. Gradually, with the help of your teachers, you will start “discovering” mathematics rather than results being handed down as gospel truths. You will also perceive that mathematics is not only the mother of science, but is also a scientific discipline, and neither a religious dogma, nor a bagful of algorithms and tricks. Like in sciences other than mathematics, we also observe patterns, make experiments to see whether the same kind of pattern recurs, seek out a general principle (mathematicians may call them conjecture, lemma, proposition or theorem) that could explain the pattern and then prove it rigorously. This is where mathematics differs from other sciences. In other sciences, you can only conduct more experiments to verify the proposed principle, but there is no conclusive proof. In other sciences, one enunciates principles that try to explain the collected data or observed phenomenon but if a new set of data is replicated at many places and the existing principle or theory does not explain the new phenomenon, you look for another principle that explains the past as well as the new data. In mathematics, once a result is proved rigorously, the result/principle remains true forever. You will experience all this and more in a typical MTTT camp.

The sessions in an MTTT camp will be radically different from what you have seen in your institutes. It takes about three days for a new entrant to catch on to what we are trying to do. Do not be discouraged if you -- a brilliant student-- could not answer simple questions on topics you thought you knew ‘well’. This is one of the awakening moments. Just like learning a dictionary by heart does not make you proficient in oral or written communication, knowing the jargon is not the same as understand-

ing the subject. The camp offers an academic ambience that is unique. It is a place where you see a lot of experts who are keen to discuss mathematics, and a whole lot of young minds with a thirst for knowledge. This kind of atmosphere is very rare even among the best institutes in the country. You will see students of varied interests with a variety of talents. Make the best use of this by mixing with other participants and discussing mathematics. We encourage discussion with your peers as it is the best way to learn ANYTHING, in particular, mathematics.

Some of you may have difficulty in communicating in English. Do not worry, a teacher, a mentor, or a participant will be there to help you. MTTs camps not only groomed good mathematicians, they also gave the confidence to such students to overcome their difficulty in English. Many are now with reputed institutes in the country and have made many foreign visits. So, do not let a language be a barrier to your growth.

Since everyone around you is also committed and good, it is a good idea to see how you compare with them. However, this introspection should be used only to identify areas for self-improvement, and attend to these. *Compare with others, but compete only with yourself.* During the middle of the second week of the camp, do some self-enquiry: where were you at the beginning of the camp and what are the positive changes you could see in yourself?

As our emphasis is to make you think on your own and find your own path to learning and doing mathematics on your own, we may not introduce many new concepts and deal with them in a shallow manner. Those who are fortunate to have had good teachers and peers may, at first, be dismayed that they are not learning anything new! Let this thought not blind you so much that you fail to perceive the other aspects of the camp. Newer perspective, deeper understanding, the inner workings of the proofs, mastery over the subject, the confidence in learning new concepts on your own, and the ability to solve problems by means of asking questions, are some of the key takeaways from our courses.

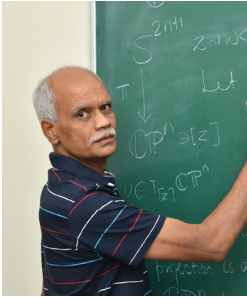
The MTTs methodology can be summed up in one sentence: We learn faster and better by mimicking and emulating experts. In childhood, we learned everything by watching others and imitating them. We made mistakes but that did not deter us from trying again and again. Teachers at MTTs camps think in front of you, show you their raw thinking process, and ask questions aloud that lead them to solve a problem on hand. We hope that consciously or unconsciously, you observe these and put them to use to understand new things and solve unseen problems. This principle is captured by a quote of Henri Lebesgue printed elsewhere in the souvenir.

With these few words, let me welcome you to MTTs 2024. I am sure you will enjoy the academic environment and hopefully, this will turn out to be one of the most cherished parts of your life! Your ideas of Mathematics and the way of learning are going to change forever!

All the best!

S Kumaresan

Message from President



On behalf of the MTTT Trust, I welcome you all to MTTT2024 - the 32nd MTTT summer camp. As you all may be aware, the MTTT method of teaching is very much different from the routine classroom teaching. MTTT firmly believes in making learning enjoyable and wants to give each one of its participants a sense of discovery.

The MTTT programmes have been able to achieve this by making the academic sessions interactive in which every student takes active part in learning. When this happens, every student takes part in this active learning, pays attention to what is being said rather than on what is written on the board, and also thinks along with the teacher. This enables the students to think ahead and discover on their own.

Prof. S. Kumaresan, Director, MTTT Programme has written exhaustively on various aspects of MTTT teaching. This way of learning may be demanding and it is highly rewarding. I am sure you are willing to work hard to get maximum benefit out of this programme.

The MTTT Trust wishes you all the best.

G. Santhanam



Summer Camp 2023, IIT Madras

Thanks a lot

MTTS Trust would like to record its sincere thanks to:

- Prof. S. Kumaresan, Director, MTTS Programmes, and former President, MTTS Trust, for his dynamic leadership and continued invaluable contribution to the MTTS Programme since its inception;
- National Board for Higher Mathematics (NBHM), an apex body of the Department of Atomic Energy, Govt. of India for funding the programme since 1993;
- All the donors for their generous support to MTTS Trust to carry out MTTS activities and its mission;
- The Vice-Chancellors of Central University of Tamil Nadu, and Institute of Chemical Technology, Mumbai and the Director of Sikkim Manipal Institute of Technology for according the permission to organize the MTTS2024 camps in their respective institutes and for providing us various facilities;
- Prof. G. Santhanam, President of MTTS Trust for his dynamic leadership;
- All the trustees and invitees of MTTS Trust for their untiring support and invaluable contributions to the MTTS Trust in its endeavour;
- All the members of the Organizing Committee of MTTS2024 for their whole-hearted support in taking various aspects of organizing the programmes;
- All the resource persons and mentors of MTTS2024 who have agreed to teach and guide students in spite of their busy schedule;
- Media R & D, Mumbai for preparing and printing MTTS documents;
- Mr. Nair of Scientific Books, Mumbai for supplying books;
- All of those who have contributed in making MTTS a brand in the last thirty-one years;
- Last but not the least, all the students, who are participating in MTTS2024 camps.

– Ajit Kumar
Managing Trustee, MTTS Trust



Self Assessment Team 2023

MTTS Programme – An Introduction

MTTS BUS STATION



What is MTTS?

The Mathematics Training and Talent Search (MTTS) Programme started in 1993 as a four-week intensive summer training programme and has been organised at various centres in India for the last three decades. The programme, funded by the National Board for Higher Mathematics (NBHM), has been organised by a group of committed mathematicians under the dynamic leadership of Prof. S. Kumaresan (retired professor, University of Hyderabad), the first recipient of the INSA Teachers Award in Mathematics. Over the years, MTTS has grown with a number of different training programmes held across the country round the year. MTTS has been one of the most effective and unparalleled training programmes, which has made a significant impact on the mathematical scene in India. Since 2018, all MTTS activities are being organised by the MTTS Trust, a non-profit educational trust formed in December 2016.

The Genesis

In 1989, during a conference titled “Development of Mathematics” organised by the NBHM, Prof. S. Kumaresan proposed a training programme with a vision different from the then-existing training programmes in mathematics. Subsequently, during “Discussion Meeting on Harmonic Analysis” held at the Indian Institute of Science, Bangalore in 1992, a session was devoted to discuss the academic preparation of the students who come for Ph.D. programmes in Mathematics. Prof. Kumaresan suggested that a training programme, with the aim to expose young minds to the excitement of doing mathematics, and enabling them to have a meaningful career in this field, should start at an early stage, perhaps at the B.Sc. level itself. The NBHM, an apex body of the Department of Atomic Energy, Government of India, was approached with the proposal, which promptly agreed to support such an endeavour. Thus, the programme, christened as the MTTS Programme, took off in the summer of 1993.



Aims of MTTs

The manifold aims of MTTs include:

- Exposing bright young students to the excitement of doing mathematics;
- Promoting creative thinking and initiating into art of asking questions;
- Promoting problem solving skills;
- Reaching out to students interested in mathematics across every nook and corner of the country;
- Preparing students in various aspects of mathematics required to become professional mathematicians;
- Improving the teaching methodology of mathematics in the country.

The Magic of MTTs

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 asked 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 Lebesgue,

“The best way to teach students is to think in front of them”.

Some of the regular features in the MTTs camps are: group discussions, student seminars, thinking and writing assignments, sessions on how to read mathematics books and counseling sessions.

In each on-site camp, all faculty members are present throughout all the sessions and give individual attention to the participants. They reside with the participants and spend most of their time engaged with them for the entire duration of the programme. MTTs camps provide an effective platform for the participants to interact with peers and experts in the fields, which helps them to build strong mathematical foundations. MTTs gives preference to participants from rural backgrounds, from remote areas, and to women participants. During the past 31 years, MTTs has reached



the farthest corners of the country. Every year it is ensured that the participants of the programme are drawn from almost every state of the country.

Due to the covid pandemic outbreak in 2020, the MTTs Trust had to abandon its traditional on-site camps in the summer and switch over to the online mode. It was a challenge for the Trust to replicate the highly successful interactive and students-participation based methodology of the MTTs camps, if the programmes were to be conducted online. Under the guidance of Prof. Kumaresan, several rounds of extensive discussions among MTTs Trustees and invitees were held, and experimentation with various online tools available were conducted. The success of a pilot online course conducted by Prof. Kumaresan with select students of MTTs2019 made the Trust confident enough to conduct online camps. This became an initial model for the Trust to follow, and an abridged version of MTTs2020 was conducted online. Since then all programmes under the umbrella of MTTs were conducted online by the Trust successfully until the annual summer camps in 2022. The untiring efforts of the faculty and the mentors, and the positive response from the students, made this possible.

Through the online programmes conducted in 2020 and 2021, the Trust gained expertise in teaching using online platforms. The magic of the MTTs style of teaching in the on-site camps was almost recreated in these online camps. The online programmes are immensely useful in reaching out to a large number of students from remote geographical locations, giving them an initial training, and for holding the follow-up camps of different MTTs programmes. After the easing out of the covid situation and pandemic induced restrictions in the country, the Trust has not only resumed its on-site activities starting from MTTs2022, but also continued to use its collective experience and expertise, by conducting various highly appreciated programmes in the online mode.

A key aspect of all the MTTs camps is that feedback is taken from all the stakeholders, including students, mentors, coordinators, and faculty. The MTTs motto "Improving Myself" is also applicable to itself, as appropriate measures based on constructive feedback are taken up for future improvement. In fact, this meticulous exercise is one of the reasons why MTTs has had continued success for over three decades, and has evolved into one of the most effective training programmes.

Academic Programmes

MTTS Annual Summer Camps

The main and oldest format of MTTS camps, itself known as the MTTS Programme in the initial decade, is the intensive four-week MTTS annual summer camp. It has been held uninterrupted every summer since 1993 (including the years 2020 & 2021 disrupted by the pandemic, when it was held online). The main camp comprises three levels: 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 180–200 students every year. Two more Level-O camps are held at geographically separated locations in the country, catering to approximately 100 more students of BSc second year with the aim of reaching out to students, and inspiring them to take up a career in mathematics.

Usually, at each level, four fundamental topics in mathematics are taught by a highly committed team of faculty members from various leading institutes in India, well-versed in MTTS pedagogy. The camp is set up so as to give individual attention to every student and ensure that no student feels left out. All teaching faculty, aptly called resident faculty, stay with the students in all the classes, and help them resolve their doubts and queries not only during lunch and tea breaks but often also after dinner.

After four weeks of intensive training, one experiences a remarkable improvement in students' critical and independent thinking, mathematical writing, and problem-solving abilities. In fact, the whole approach of these students towards mathematics changes. Group discussions at the end of each session and student seminars are hallmarks of this programme, which enable, nurture and hone these abilities. Innovative sessions like reading from a maths book, and learning effectively from online video content, are conducted for students to keep up the learning even after returning from the camp.

The Summer Camp is advertised sometime in December and the applications are invited through an online application portal. Around 250 students out of about 3000 applicants, in three levels are selected to participate in the summer camps after a very rigorous selection procedure. The selection of students primarily depends on their consistent academic record, and the recommendation of a teacher closely acquainted with the student. The process also ensures that students from all states, including a fair proportion of girl students, are selected. The programme takes care of the travel, accommodation and food of the participants, and provides other study materials including books. A mini-feedback after a week and detailed feedback towards the end of the programme are collected, which are used for self-assessment and improvement.

InitMath (known in initial years as miniMTTS) and PTMT Programmes

In order to provide opportunities to a larger number of students and teachers, regional level programmes of shorter duration are held that are modelled on the

MTTS methodology. Two initiatives that have served the mathematics community across the country are Initiations into Mathematics (InitMath), and Pedagogical Training for Mathematics Teachers (PTMT) programmes. So far 77 InitMath camps and 17 PTMT programmes have been organised in various parts of the country in the past decade. These camps have been organised in almost all states in the country, including several in geographically disadvantaged regions, motivating a large number of students from remote areas to pursue a career in mathematics. Several InitMath camps from 2020 to 2022 were also held online. *These camps are conducted throughout the year, and potential applicants should see the MTTT website for information about upcoming camps.*

Online Foundation Course in Mathematics (OFCM)

“Foundations” is a unique course taught in the MTTT camps to initiate the students to some fundamental topics of mathematics based mainly on mathematical logic. After attending a 2-week course on Foundations in the MTTT camps, almost all participants so far have experienced a change in their attitude towards mathematics, problem solving abilities, and logical and analytical thinking. They also acquire a high level of confidence for self-study to undertake courses in higher mathematics. In order to facilitate the transfer of the positive changes that the Foundations course brings to MTTT participants, to many more students across the country, the idea of hosting it in an online form was mooted after the MTTT2020 Summer Camp. The first edition was held online in October 2020 with six parallel online camps (with 12 sessions each, over a duration of 3 weeks) covering almost all states of the country. One of these camps was also live streamed on YouTube, which was watched by a large number of students and the viewers were guided online by several mentors. The Trust has been successfully conducting this programme every year since then. 24 OFCM camps have been conducted so far, reaching out to a large number of motivated students. It is expected that OFCM will be held in August each year in the near future, with the application *portal opening some time towards the end of June.*

Overture (OVTR)

To further the reach of MTTT training to a larger audience of deserving students, a new programme titled “MTTS Overture” was started in 2023 through which two-day workshops were held in colleges in different parts of the country. In each of these camps, about fifty students studying in colleges in the locality, are trained by two experienced MTTT faculty. Two very short courses out of Real Analysis, Linear Algebra, Foundations, etc., were run exposing the young undergraduate students to the MTTT learning methodology, and to various resources for self-learning. The MTTT trust bore the cost pertaining to the resource persons and the host institutes were asked to arrange food, refreshment, etc., for the participating students (at times with a nominal fee, if needed). The pilot project in 2023 has had a significant impact, leading the Trust to make this a regular activity. The Trust expects to conduct the Overture camps during the period September – November every year, and preferably in institutions that are serving students in geographically disadvantaged locations. The colleges interested in organizing Overture camps can apply online on the MTTT website.

Follow-up of the Summer Camp

A follow-up of the MTTT annual summer camp was envisioned when the idea of the camp itself was conceived, to allow individuals to get intensive training in the subject of their choice under an expert in the field. In the first 3-4 years of the existence of MTTT, the format followed was to choose a mentor from whom a few students (not more than 3) could learn over a period of 2 weeks. A variation was conducted for three years in Winters 1999-2001 at HRI, Allahabad. They were each two-week intensive camps, with two advanced courses. The audience was about 15-20 students selected from among those who attended the summer camps.

Keeping in mind the reasons for discontinuation of the earlier editions, the Follow-up camp restarted in Dec 2023 after over 2 decades, following a one-week version of the second model, as an experiment. This camp focused on the "Talent Search" part of MTTT, by hosting a camp at Bhaskaracharya Pratishthana, Pune. The main premise was that a smaller number of students who have made full use of the opportunity presented by the summer camp, and are well-trained by it, can be pushed a lot more in a short intensive camp, and can be trained further for advanced courses, heading towards research in mathematics. This aim was realized, and it is likely that the Follow-up (in this format) will be continued in the near future.

Online Short Courses (OSC) and Online Lecture Series (OLS)

Encouraged by the success of the online programmes since 2020, a number of short courses and lecture series have been organised by the Trust depending upon the availability of resource persons, and feasibility for students. These also include several online courses, which served as a follow-up to various camps. These courses are based on advanced topics in mathematics aimed at students at different levels, and are given by experts in the respective fields. Each OSC has about 8-10 online sessions, and each OLS has about 12-15 online sessions consisting of 60 minutes of lecture followed by discussion by the participants in groups for about 40 minutes. Since May 2020, 2 lecture series and 15 short courses in different areas have been organised, with a large number of students and teachers from across the country participating in, and benefiting from these.

Online Open Mathematics Forum

The purpose of this forum is to organise expository lectures by mathematicians with high levels of expertise in diverse areas. These online lectures are usually for about 60 minutes and are followed by a discussion with the participants. The forum is an ideal way of exposing talented students in the country to various aspects needed for a successful career in mathematics. This is aimed to attract a large number of students, and prepare and entice them for further studies and research in the area of the exposition. The forum is expected to build a critical mass of scholarship in more areas in the long run.

Online Workshop on Assessment

The Online Workshop on Assessment is an initiative by the MTTT Trust to start a new

movement in the country to bring an appropriate change in the assessment system. In our prevalent system, the grades obtained by the students do not reflect their real learning and confidence in the subject, since the assessment is often solely based on memorisation and rote-learning. The online Assessment Workshop was born out of Prof. Kumaresan's conviction that assessment is different from tests/exams and his years of experience as a teacher.

One such workshop was conducted by him, and dealt with some radically different ways of assessment that are class-tested over three decades and are practical. More than a hundred teachers participated in the workshop. They were willing to experiment and to discuss the outcomes in various fora, so as to encourage more teachers around the country to adopt some of these ideas in the near future. The Trust plans to take this forward, aiming to bring meaningful changes in the assessment system in the country.

MTTS Self-Assessment (MTTS-SA)

Another initiative started by the MTTT trust during the pandemic days to improve student learning and understanding, is to conduct online self-assessment. Regular examinations are never conducted during MTTT programmes, but the Self-Assessment gives the students an opportunity to assess their learning and understanding. This activity is conducted through the MTTT Moodle site, which can be accessed by logging in at <https://classroom.mttts.org.in/>. The main aim of the self-assessment is for students to test their understanding of basic concepts. There are several types of questions, all of which are created in a manner so that a student can attempt it online, identify their mistakes, reflect on their (correct as well incorrect) answers, without the presence of a teacher.

The self-assessment has been regularly conducted during the online programmes, especially OFCM. It was also made available during the on-site MTTT2022 camp, and InitMath camp in Himachal Pradesh in Oct 2023. It has been observed that though the self-assessment was not mandatory, most students end up attempting it multiple times. There is a tendency among students initially to go through multiple attempts just to increase one's "score", but (with a couple of gentle reminders from resource persons) many of them get used to thinking over the answers at the end of each attempt, once they realise that understanding of concepts is far more important than just having a good score.

In the future, the MTTT Trust plans to make MTTT-SA available to students at various levels and on various subjects. In order to reach this goal, a team of MTTT faculty and mentors has been formed, whose primary goal is to assist in the creation of a question bank for some of the basic courses, make the questions moodle-friendly and help run the self-assessment in various camps.

Future Plans

MTTS has managed to reach out to students from almost every part of the country and has inspired a large number of students to become highly competent mathematicians, including mathematics teachers at all levels. But for a vast country, just

having 3 camps for Level O, one camp of Level-I and Level-II each and few InitMath camps are not sufficient. MTTs would like to organise more such camps in the country so that it can help students to learn mathematics in a proper manner and also help mathematics teachers in pedagogy. As a first step, MTTs Overture is making forays into territories which have been untouched so far in terms of exposure, and thereby getting the Trust closer to its goal of reaching the farthest reaches of the country.

A large number of MTTs alumni who have become established mathematicians are willing to contribute in the Trust's endeavours, which can change the way mathematics is being taught in the country in the long run. Further, the Trust also plans to build a movement for bringing meaningful changes in the assessment system in the country, by conducting more workshops on Assessment, as well as expanding the scope of Self-Assessment, and run it independently of individual camps.

In case you wish to organise an InitMath, Overture, or PTMT programme, you can log into the MTTs website (<https://4dSPACE.mttS.org.in/>) and apply online. Proposals which assure some partial financial support from the host institution may be given preference. Your cooperation, help and suggestions will help us make the programmes successful.

If you have any specific questions or wish to send your valuable suggestions, please feel free to write to us at the Trust email id: mttstrust@gmail.com.



InitMath Kerala



InitMath Madya Pradesh



InitMath Sikkim



InitMath Himachal Pradesh



InitMath Jammu & Kashmir



InitMath Uttarakhand



The MTTs Pedagogy

Teaching Methodology of MTTs Activities

The teaching methodology in the MTTs camps, whether on-site or online, is radically different from regular classrooms. The faculty for these programmes are active mathematicians with a strong commitment to teaching, and are chosen from various leading institutions in the country. These resource persons refrain from delivering well-polished lectures. All the sessions are highly interactive, and the participants are asked to think, experiment, formulate and prove mathematical results on their own, at every stage. The aim of the instructions is not to give routine lectures, but to stimulate the participants to think and discover mathematical results on their own. From its inception the MTTs programme has adopted this inquiry-based learning methodology which in recent studies has been identified as a core part of the effective teaching methodologies in pedagogy courses all over the world. It is evident from students' feedback and faculty assessments that the MTTs teaching methodology nurtures the inquisitive nature of students, equipping them for self-study and research.

Role of the Resident Faculty

In any session, questions are first asked and time is given for the participants to think along. These questions are different from those encountered in usual classes, and are meant to provoke thinking. Some examples of such questions are, "Why is this true?", "Why is this relevant?", and often "What do you think is the next question?" The definitions, and proofs of theorems, are derived using inputs from the participants, often based on well-chosen leading examples. The emphasis is on thinking first, refining the thoughts, and then putting them down on paper into a standard "textbook" definition, statement, or proof.

The teachers attend all the sessions, not just their own. They identify the difficul-

ties of the students and give individual attention to each one of them. Many-a-times, teachers and mentors also have discussions with interested students in the evenings or after dinner. This is one of the unique features of the MTTs camps, and reasons why each student leaves the camp with the sense of betterment in their learning abilities.

Role of the Group Discussion, Student Seminars and Assignments

Each session is followed by a group discussion slot given for students to internalize, revise, and refine the concepts learnt in the previous session. The students are subdivided in small groups and all of them are asked to discuss and clarify the concepts, examples seen, and proofs learnt in the previous session amongst themselves.

Students are also encouraged to give short seminars on various topics enhancing their communication, as well as explanation skills. They are also given writing assignments regularly to formulate and write logical proofs of theorems and solutions of problems. These assignments are assessed and elaborate feedback is given, so as to improve their mathematical writing skills. All teachers are present during group discussions and seminar sessions to identify difficulties of the students, and assist them.

Role of Mentors

MTTS alumni pursuing their higher studies, and teachers familiar with the MTTs teaching methodologies are being inducted as mentors during the programs. Their primary role is to facilitate discussion sessions, correct assignments, and often, as the name suggests, act as a mentor for those students who are initially reluctant to approach the resident faculty. It is envisaged that these mentors would adopt the MTTs pedagogy in their teaching, thereby adding to the pool of resource persons for future MTTs activities.

Methodology of MTTs Online Activities

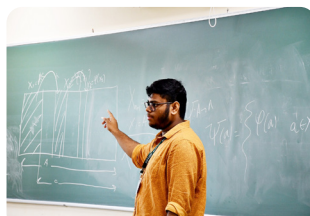
In the online camps, each session consists of a lecture part, followed by a mandatory discussion session. The lecture sessions are as interactive as in the on-site camps, with the students encouraged to use non-verbal feedback in response to the Yes/No type questions asked by the teacher. Some of the participants are then called upon, and the course often builds on their responses.

After explaining a concept or a proof, students are given time to go through the same orally, and once they finish going through it, the Yes/No and Raise Hand kind of option buttons are used to ensure that many of the students have followed the concept. Each session is followed by a discussion time in smaller groups which utilise the breakout rooms. The discussion sessions are facilitated by the MTTs faculty and mentors designated for the same. The mentors are students and fac-

ulty who understand the spirit of the MTTs teaching methodology and are assigned to work with smaller groups of students, thus ensuring individual attention, even in the online mode. The mentors' presence is a crucial aspect, especially in helping first-time participants imbibe the MTTs methodology. Online polls are conducted at the end of each session to understand how much students have followed in the particular class. Thus, a supportive classroom atmosphere and eliciting student intellectual input is effectively recreated even in the online mode of instructions.

The teaching methodology followed in the online MTTs camps has been found to be very effective and has been appreciated by all the students, mentors, and teachers who have participated in MTTs activities. The mentors are the backbone of this success in this format, since they act as a conduit between the instructor and the students, helping provide individual attention to the student, and immediate feedback to the instructor. Feedback from all stakeholders reveal that the Trust has been truly successful in recreating its on-site teaching model in the online camps.

Seminars at Summer Camps



MTTS – Impact Beyond the Camps



MTTS Programmes – Direct Impact

Since 1993, 31 MTTs four-week summer camps, 77 InitMath camps of duration one to two weeks, 17 PTMT camps, 24 Online courses on Foundation Course in Mathematics, 22 Overture camps, 2 lecture series and 15 short courses, and many follow-up camps have been organised. More than 8,000 students and 500 teachers have been trained in the various MTTs camps.

- More than 500 MTTs Alumni have received Ph.D. degrees in Mathematics or are in the process of finishing their degree from prestigious institutes of India and abroad.
- More than 1000 have become mathematics teachers at various levels from schools to universities and research institutes.
- The programme has inspired a large number of girl students, and students from rural areas, to become professional mathematicians and who are serving in many of the leading institutions.
- In recent years many of the MTTs alumni/ resource persons have received various prestigious awards and recognitions.
- It is widely acknowledged by the alumni, mentors and resource persons of MTTs that the quality of training is such that it helps them not just in mathematical careers, but also any other fields in which they choose to work. The training and work ethic that they take away from the camps is also appreciated by their peers.

All of these show that the MTTs programmes have made a significant contribution towards the mathematical community.

Contribution Towards Learning Resources

Video Lectures by Prof. Kumaresan

In order to reach a wide audience, for learning mathematics online in the MTTS methodology, Prof. Kumaresan has been producing a number of video lectures and has made them available on YouTube. Almost four hundred videos have been uploaded so far. A large number of students, researchers and teachers have been benefited by these video lectures.

These are for various UG/PG level topics, and are available at <https://4dspace.mtts.org.in/vl>.

Books by MTTS Faculty

Several books have been written by resident faculties, based on years of experience in MTTS. These books have been widely acknowledged by teachers and students across the country and abroad.

SageMath

Prof. Ajit Kumar, associated with MTTS from his student days in 1996, to being managing trustee of the MTTS Trust since its formation, has given a series of lectures on SageMath, which are available at <https://www.youtube.com/channel/UC7Lej7bjaqXjjmczCsY55jQ/featured>

Expository articles by Prof. Kumaresan

Expository articles written by Prof. Kumaresan have benefited many learners, and have been downloaded innumerable times. They are categorized both by level and subject, can be searched by keywords, and are available for downloading at <https://4dspace.mtts.org.in/ea>

MTTS Classroom

The Moodle page for all MTTS Programmes (<https://classroom.mtts.org.in/login/>) is where class transcripts and Self-Assessment for the participants are available. (Login credentials are needed).

It is envisaged that MTTS Self-Assessment can be run through this forum, independent of camps.

MTTS YouTube Channel

The MTTS Trust has a YouTube channel (<https://www.youtube.com/c/mttsprogramme>), where online courses and discussions from past camps are available. Some of the MTTS online camps are also live streamed on this channel.

Alumni Contribution in Spreading MTTs Pedagogy

MTTS alumni have used their MTTs experience to conduct sessions and workshops of their own, thereby helping more students than the Trust can directly reach. Some instances are recorded below:

Continuing Seminars & Group Discussions

Elanchearan R. S. (Participant MTTs2017 & MTTs2018) on his initiative during UG days:

As with most of the MTTs alumni, when Elanchearan went back to his college from the summer camp, the constant thought was to identify ways of continuing the good practices learnt during the camp on one hand, and on the other, coming up with a satisfying and fruitful way of giving back. To this end, he formed a small interest group (mostly juniors) in his college. The goal was to understand basic mathematics, learn from peers, and have an active learning environment. The group met after classes, where he presented the MTTs Level O content, with a space for learning through asking questions and discussions. Later, he turned this group into a community comprising students from nearby colleges and a few more MTTs participants, to continue the efforts. These groups were also sensitized about different training programs, workshops, and higher study opportunities.

These initiatives yielded positive outcomes. Several members, including him, are currently pursuing PhDs in India and abroad, while others have taken forward this training to other fields. For instance, a student from a local government arts college, who went on to pursue masters at an NIT, recently shared that the critical thinking skills acquired from the group discussions have been beneficial in his corporate career.

Workshop for their peers

Arun Pandey, Jyoti Prabha, Kumkum Sahu, Nilay Dosad (Participants, InitMath 2024 Uttarakhand):

From March 19th to 22nd, Motiram Baburam PG College hosted a workshop led by the Mathematics Department, with an aim to enhance interest in mathematics, drawing inspiration from the MTTs programmes. The 4 students from this college, namely Arun Pandey, Jyoti Prabha, Kumkum Sahu, and Nilay Dosad, who attended the InitMath camp at Ram Chandra Uniyal Govt. PG College, Uttarkashi, conducted sessions on various concepts learned during the 6-day camp, supported by their teacher Dr. Narendra Singh Sijwali. The feedback received was that this workshop was quite interactive and helpful in understanding fundamental concepts in Mathematics. The participants got some time to have interaction with their fellow students, and also absorbed some glimpses of the enthusiasm, coordination and dedication of the students who conducted this workshop.

Mathematical Inception – A Workshop for School Students

Athul M. K. (Participant, MTTS2016, MTTS2017), Chandhini K. Nair (Participant, MTTS2016, MTTS2018) and Elancheeran R. S. (Participant, MTTS2017, MTTS2018):

Athul, Chandhini and Elancheeran, share their experience in their own words:

“We wanted to try MTTS methods at the school level for a long time. After several experiments in informal settings, in May 2023, we organized a 6-day residential programme “Mathematical Inception” for about 60 students at Veveaham Schools, Dharapuram. The philosophy, structure, and logistics, are all modelled after the MTTS camps. The primary goal was to make the students become independent thinkers, and learners by instilling the art of asking questions, and learning through peer discussions. This audience consisted of students who had just completed 10th grade. We received 250+ applications from 11 states (thanks to the well-connected pan-Indian MTTS friends in social media), but we restricted the selection to those from Tamil Nadu and 3 from Kerala, due to logistical constraints. Further, around 15-20 local school teachers were given the opportunity to observe a couple of sessions, and discussions, and interact with the speakers. At least one of them tried to incorporate some of their observations into their regular classroom, with positive impact, within those 6 days itself.”

“Students found the group discussions, asking questions, and critical thinking to be a very new experience. MTTS alumni may not be surprised to know that the informal mathematical interactions the students had with the resource persons during lunch and dinner helped them gain confidence, and initiated academic interactions among themselves. Towards the end of the programme, we could see the students becoming more independent, and confident in thinking through abstract concepts. Remembering our own profound changes after attending our first MTTS camp, witnessing their happiness was the ultimate validation of this initiative’s impact.”

For more information, see: <https://mi.elan.me/2023>

Curry Leaf – A Math Club of MTTS Alumni

Curry Leaf is a math club that aims to provide a space for MTTS alumni to continue learning and engaging with mathematics even after the programme ends. Through its activities and events, the club endeavours to foster a sense of community among its members and to encourage them to use their knowledge and skills to benefit the wider society.

The idea of forming a club called Curry Leaf was conceived by a small group of MTTS alumni, in 2020, and received logistical and advisory support from the Trust in its initial days. The club aims to provide a virtual platform to the alumni of MTTS to connect with each other, as well as promote mathematical discussions and logical thinking. By providing a platform for experimentation and collaboration, the Curry Leaf team members take ownership of their ideas, and work on them with purpose and commitment, to further their professional and personal development.

Many events, including reviews of books, conversation with MTTs alumni & faculty, workshops on tools like LaTeX, and mathematical talks, have been conducted so far. All of this content is available online and can be accessed on the Curry Leaf YouTube channel. The annual signature event, Curry Leaf Days, brings together enthusiasts of mathematics, and conducts engaging talks and panel discussions.

The club's future plans are to provide a strong platform for MTTs alumni to connect, network and collaborate, while also creating a space for experimentation and service. By bringing together people with diverse ideas, skills, and expertise, Curry Leaf hopes to make a real, positive, and lasting impact on the mathematical community in India.

For more information, please see: <https://sites.google.com/view/curryleaf/home>

"All depends, then, on finding these easier problems, and solving them by means of devices as perfect as possible and concepts capable of generalization."

– David Hilbert



Overture Anand, GJ



Overture Kumbakonam, TN



Overture Jorhat, AS



Overture Balrampur, UP



InitMath Kerala



MTTS2023 Follow-up



InitMath Sikkim



InitMath Assam



InitMath Jharkhand

*"Believe nothing
Merely because you have been told it.
Or because it is traditional.
Or because you yourself have imagined it.
Do not believe what your teacher tells you,
Merely out of respect for the teacher.
But whatever, after due examination and analysis,
You find to be conducive to the good,
The benefit,
The welfare of all beings,
That doctrine believe and cling to,
And take it as your guide."*

– Gautam Buddha

*"I hear, I forget.
I see, I remember.
I do, I understand."*

– A Chinese Saying

The MTTs Impact – In their own words

I like the discussion part because it really helps to clear all the doubts, discuss something extra, know other students way of learning. But I would say I like the lecture part the most because of the way the professors teach at the camp. Lectures are intriguing, creates curiosity in mind, makes us ask questions, and think hard.

Also writing summary was a nice idea because it covered everything once again in case we had missed any point during the lecture.

Shambhavi Manerikar, Participant – MTTs2023 Followup (Dec 2023).

All the online classes I have attended this was the best. The way instructor, mentors made sure that each and every student actively participate in the sessions was a new thing I am encountered to. In all classes I have attended before the only aim of the teachers was to complete the topic before deadline. But in this course we were also taught to change the way of our thinking. Now I am more confident than before in these topics.

Krishnakumari Prajapati, Participant – OFCM2023

I did not think of Maths like this, my perspective totally changed. The way teachers taught us, it made me feel very happy, and I used to become excited for the next class. It totally changed my way of learning Maths.

Kunti Sao, Participant – InitMath Uttarakhand (March 2024)

My exams were also going on but I had never felt that I should leave the classes. All the lectures were very interactive. I really had enjoyed a lot and gained many things from these camp. The best part of programme was breakout room where I enjoyed a lot dealing with different topic and presenting my views on any particular topic and also gaining knowledge from other participants. I had very great experience in this camp.

Deep Rajesh Ghanchi, Participant – OFCM2023

Overall the course has taught me the importance of asking questions. Asking questions is mathematical thinking, per se. I've observed quite a change in my thinking within these 12 days. I always sorta jumped to the conclusion without actually giving it a good reason. But the course has helped me to develop these reasons/proofs and the way to do it (by asking questions). It might seem like a very small change but the impact it has had is huge. Everything seems so clear as if I'm seeing it in a new light. I am now confident enough to ask questions and prove results.

Gayatri Ramchandra Shigwan, Participant – OFCM2023

The program was very useful. It helped me to understand the construction of proofs in the textbooks. The participation enhanced the understanding of the concepts. It really took me to the higher level of understanding that I never had from my college or youtube videos. I learnt many concept and improved my geometrical level of understanding which help me to take class.

Ms. Petcie Annie, Sahrdaya College of Advanced Studies, Kodakara, Kerala, Participant – PTMT TN

These breakout rooms made me discuss things with others ,understand their perspective of solving or proving the same thing. Also we did ask and answer any questions others had in breakout room. I think polls are useful as they give you an overall idea of what all you studied and how much of it were you able to understand.

Komal Bhambri, Participant – OFCM2023

I found programme very useful. The designed content and engaging session have provided me with valuable insights and skills that I believe will have positive impact on my personal and professional development. My confidence level is so increased that I cant explain it in words. It has been an invaluable experience for my academic also for my professional growth.

Ms. Dhavalshri C Rokade, Rajaram College, Kolhapur, Participant – PTMT TN

The commitment of all the resource persons towards the programme is very inspiring. It is very rare to see such commitment. Their presence in all the classes and discussion sessions motivates us to be honest.

Dr. Bipendra Singh Rawat, Govt. PG College Thalissain, Mentor - InitMath Uttarakhnad (March 2024)

In terms of steps for my growth and development, these (self-assessment) quizzes encouraged me to:

Self-Reflect: I assessed my own knowledge and skills honestly, pinpointing my strengths and weaknesses.

Study More Effectively: The quizzes highlighted where I needed to focus my study efforts.

Seek Help When Needed: If I struggled with specific concepts, I reached out to peers or instructors for clarification.

Track Progress: Over time, I could see how my scores improved, which was motivating and reassuring.

In short, the Self-Assessment Quizzes were a valuable tool for self-improvement and a vital part of my learning journey in OFCM.

Isaac Rai, Participant - OFCM2023

In this 6-days programme, one of our bad habits was resolved, i.e., screen time reduced from 4 hours a day to 30 minutes a day.

Saurabh Singh Rana, Participant - InitMath Uttarakhand (March 2024)

I have been really competitive from my childhood days. In school, I was more interested in showing off my knowledge rather than learning. But the methods of MTTS changed my perspective and I learnt that there is so much more to maths than rote learning.

After becoming a mentor, my viewpoint changed by 180 degree and I got to know how a student learns to think. Being a mentor, and observing the discussions has helped me learn how to teach, even though its not perfect yet. Now, I at least know that I should try to make the student capable of asking the right and relevant question in maths.

MTTS has slowly transformed me into a critical thinker, taught me by experience the importance of listening to others' ideas and made me a patient mentor who wasn't teaching and throwing her ideas to someone, but trying to cultivate in them the ability to find the answer themselves. And as a teacher now I realise that the maths problems the kids bring are not restricted to my syllabus, so all that out of the box thinking is so much more essential to me now and it makes maths so much fun. MTTS has impacted me by teaching me 'how to think' and indirectly 'how to explain'.

Viona D'Souza, PNCF Division, Allen Career Institute, Nasik

Mentor - OFCM2023 ; Participant - miniMTTS Nagpur (Jan 2020), Level O (MTTS2020)

The programme has been incredibly useful to both me and our research scholars, who were volunteers, but also attended the entire programme since they are also teaching some courses. One of the most valuable aspects of the program was the opportunity to enhance our teaching skills through the skills of resource persons. They taught us how to effectively interact with students, even when they may not initially be interested in the subject matter.

Since completing the program, we have noticed a remarkable change in our classes. The students have become more engaged and enthusiastic about learning. I truly believe that the techniques and strategies we learned from the program have played a significant role in this positive transformation. Thank you for organising such a beneficial program. It has undoubtedly made a lasting impact on both me and our research scholars.

Dr. Punam Gupta, Local Coordinator - InitMath MP (Sept 2023)

Faculties from various departments were present in the inaugural ceremony, where they got a glimpse of what was to follow in the sessions. They were impressed by the concept of the camp, in particular the fact that we don't teach Mathematics, rather we learn with the students.

The parents of some participants were very excited that their children got a chance to participate in the programme. At first, some of them (especially parents of girl students) were worried about sending them so far, but later everyone was satisfied upon seeing the transformation in the students. In fact, the parents of one student, whom they refused to send to a previous camp at a different location, told us that their confidence also increased, and assured us that they will definitely allow their children to travel for future camps. Thus, apart from the impact on the students, this camp also transformed the thinking of their parents too.

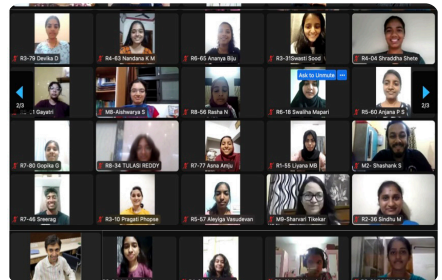
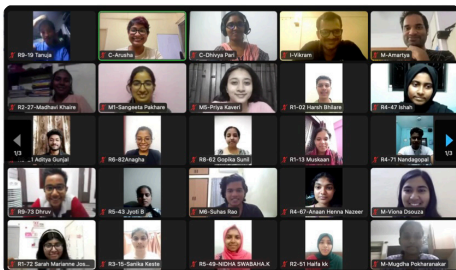
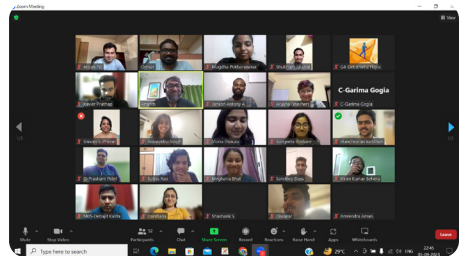
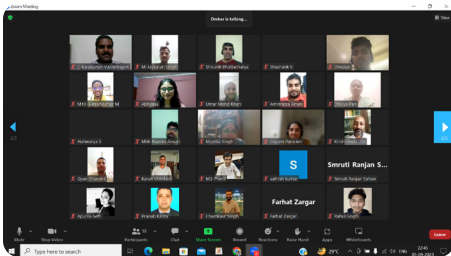
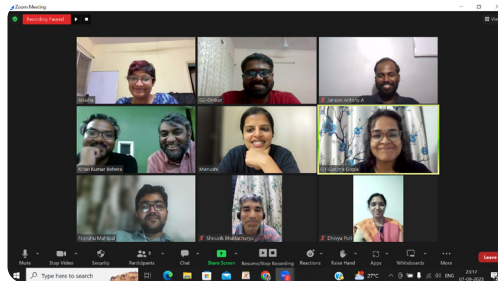
Dr. Priyanka Sangal, Local Coordinator - InitMath Uttarakhand (March 2024)

This lecture made me think on my own. In classes we have already answer and we think how the answer will come. But in breakout rooms, I learnt how we make questions and answers. My mentor has helped us in clearing my doubts and explain the definition if we have any confusions. It makes me very confident on what I learnt.

Karthika D, Participant - OFCM2023

It (OFCM) was really helpful for me. Because, I have already learnt these things in some other vague manner. But, when I started attending this class, I have started to understand these in some other perspective which will be helpful for me to remember and recall all these things forever. Now itself I have started to learn to write proofs on my own. The access of breakout room make us to feel free to make mistakes as we were conversing with my peer group friends and to learn in a friendly and joyful manner.

Muhammed Ashwaaq Hussain S, Participant – OFCM2023



NURTURING CRITICAL THINKING

Questions to ask to assess, improve and refine one's idea

Clarity

Could you elaborate further?
Could you give me an example?
Could you illustrate what you mean?

Accuracy

How could we check on that?
How could we find out if that is true?
How could we verify or test that?

Precision

Could you be more specific?
Could you give me more details?
Could you be more exact?

Relevance

How does that relate to the problem?
How does that bear on the question?
How does that help us with the issue?

Depth

What factors make this a difficult problem?
What are some of the complexities of this question?
What are some of the difficulties we need to deal with?

Breadth

Do we need to look at this from another perspective?
Do we need to consider another point of view?
Do we need to look at this in other ways?

Logic

Does all this make sense together?
Does your first paragraph fit in with your last?
Does what you say follow from the evidence?

Significance

Is this the most important problem to consider?
Is this the central idea to focus on?
Which of these facts are most important?

Fairness

Do I have any vested interest in this issue?
Am I sympathetically representing the viewpoints of others?



Organizing Committe MTTs2024

Director	S. Kumaresan , <i>GITAM University, Visakhapatnam</i>
Coordinators	Ajit Kumar , <i>ICT Mumbai</i>
	P. S. Srinivasan , <i>Bharathidasan University, Tiruchirapalli</i>
	G. Santhanam , <i>GITAM University, Visakhapatnam</i>
	D. Sukumar , <i>IIT Hyderabad</i>
	Vikram Aithal , <i>ICT, Mumbai</i>
	A. Chandrashekar , <i>Central University of Tamil Nadu</i>
	Amiya Ranjan Bhowmick , <i>ICT Mumbai</i>
	Biswajit Deb , <i>SMIT, Sikkim</i>
Members	A. J. Jayanthan , <i>(Ret.) University of Goa</i>
	B. S. Upadhyaya , <i>(Ret.) RIE, Mysore</i>
	Bhaba Kumar Sarma , <i>IIT Guwahati</i>
	Vishnu Namboothiri K , <i>Department of Collegiate Education (Govt. of Kerala)</i>
	Ananthnarayan Hariharan , <i>IIT Bombay</i>
	Sheetal Dharmatti , <i>IISER Thiruvananthapuram</i>

"The best way of overcoming a difficult problem is to solve in some particular easy cases. These give much light into the general solution. By this way, Newton says, he overcame the most difficult things."

– David Gregory

"Do not satisfy your vanity by teaching them great many things. Awake their curiosity. It is enough to open their minds, do not overload them. Put there just a spark. If there is some good inflammable stuff it will catch fire. "

– Anatole France

Resource Persons, MTT2024

Programme Director	S. Kumaresan, <i>GITAM University, Visakhapatnam, Andhra Pradesh</i> , <i>kumaresa.mtts@gmail.com</i>
Academic Coordinator	G. Santhanam, <i>GITAM University, Visakhapatnam, Andhra Pradesh</i> , <i>gsanathana@gmail.com</i>

Centre: CUTN, Thiruvarur

Local Coordinator (Level O, I, II)

A. Chandrashekar, *Central University of Tamil Nadu, Thiruvarur*

Level O	
Subjects	Name and Address
Foundations	T. Sengadir, <i>CUTN, Thiruvarur, Tamil Nadu</i> , <i>tsengadir23@gmail.com</i>
Real Analysis	Dhivya Pari, <i>VIT Chennai, Tamil Nadu</i> , <i>dhivyapari.10@gmail.com</i>
Linear Algebra	D. Sukumar, <i>IIT Hyderabad, Telangana</i> , <i>sukumarmtts@gmail.com</i>
Riemann Integration	Amber Habib, <i>Shiv Nadar University, Gautam Buddha Nagar, Uttar Pradesh</i> , <i>amber.habib@snu.edu.in</i>
Number Theory	Vishnu Namboothiri K, <i>BJM Government College, Chavara, Kerala</i> , <i>vishnu.mtts@gmail.com</i>

Level I	
Subjects	Name and Address
Linear Algebra	Bhaba K. Sarma, <i>IIT Guwahati, Assam</i> , <i>bhabasarma@gmail.com</i>
Analysis	V. Balakumar, <i>NIT Puducherry, Karaikal, Puducherry</i> , <i>balakumar.math@gmail.com</i>
	Vikram Aithal, <i>ICT Mumbai, Maharashtra</i> , <i>vikram.aithal@gmail.com</i>
Algebra	Ananthnarayan H, <i>IIT Bombay, Maharashtra</i> , <i>ananth.mtts@gmail.com</i>
	Dipankar Ghosh, <i>IIT Kharagpur, West Bengal</i> , <i>dipankar@maths.iitkgp.ac.in</i>

Topology	Vikram Aithal, <i>ICT Mumbai, Maharashtra,</i> <i>vikram.aithal@gmail.com</i>
	V. Balakumar, <i>NIT Puducherry, Karaikal, Puducherry,</i> <i>balakumar.math@gmail.com</i>

Level II	
Subjects	Name and Address
Linear Algebra	Venketasubramanian C G, <i>IISER Tirupati, Andhra Pradesh,</i> <i>venketcg@gmail.com</i>
Algebra	G. Santhanam, <i>GITAM University, Visakhapatnam,</i> <i>Andhra Pradesh, gsanthana@gmail.com</i>
Analysis	Dharmatti Sheetal, <i>IISER Thiruvananthapuram, Kerala,</i> <i>sheetal.dharmatti@gmail.com</i>
	R. Roopkumar, <i>CUTN, Thiruvarur, Tamil Nadu,</i> <i>roopkumarr@gmail.com</i>
Topology	Pratulananda Das, <i>Jadavpur University, Kolkata, West Bengal.</i> <i>pratulananda@yahoo.co.in</i>

Mentors (All Three Levels)

Dr. Aditya Subramaniam, <i>IISER Tirupati, Andhra Pradesh.</i>
Dr. Anuwedita Singh, <i>IITM Gwalior, Madhya Pradesh.</i>
Dr. Chellapillai D., <i>Central University of Tamil Nadu, Thiruvarur, Tamil Nadu.</i>
Dr. Darshana B. Likhada, <i>Indian Institute of Teacher Education (IITE), Gandhinagar, Gujarat.</i>
Dr. Hariharan S. , <i>Bharathidasan University, Tiruchirapalli, Tamil Nadu.</i>
Dr. Janson Antony A, <i>Keshav Mahavidyalaya, University of Delhi, Delhi.</i>
Mr. Manu Mathew, <i>Central University of Tamil Nadu, Thiruvarur, Tamil Nadu.</i>
Dr. Manushi Gupta, <i>JK Lakshmipat University, Jaipur, Rajasthan.</i>
Mr. Omkar Deepak Javadekar, <i>IIT Bombay, Mumbai, Maharashtra.</i>
Dr. Prashant Patel, <i>Sardar Patel University, Vallabh Vidyanagar, Gujarat.</i>
Mr. Riyasdeen S., <i>Khadhir Mohideen College, Adhirampatnam, Tamil Nadu.</i>
Mr. Sandeep Dass, <i>IISER Mohali, Punjab.</i>
Ms. Shanmugapriya, <i>Central University of Tamil Nadu, Thiruvarur, Tamil Nadu.</i>

Centre: ICT Mumbai

Local Coordinators (Level O)

Ajit Kumar, *ICT Mumbai*

Amiya Ranjan Bhowmick, *ICT Mumbai*

Level O	
Subjects	Name and Address
Foundations	Jay Mehta, <i>Sardar Patel University, Vallabh Vidyanagar, Anand, Gujarat, jaymehta.mtts@gmail.com</i>
Linear Algebra	Arusha C, <i>IIT Bombay, Maharashtra, alphabeta487@gmail.com</i>
	A. Satyanarayana Reddy, <i>Shiv Nadar University, Gautam Buddha Nagar, Uttar Pradesh, satya.a@snu.edu.in</i>
Number Theory	A. Satyanarayana Reddy, <i>Shiv Nadar University, Gautam Buddha Nagar, Uttar Pradesh, satya.a@snu.edu.in</i>
Real Analysis	S. Somasundaram, (Retd.) <i>Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, somutvl@gmail.com</i>
Group Theory	Shameek Paul, <i>RKMVERI, Belur Math, West Bengal, shameek.rkmvu@gmail.com</i>

Mentors (Level O)
Ms. Ambika Sharma, <i>Bhavan's Hazarimal Somani College of Arts & Science, Mumbai.</i>
Dr. Arusha C, <i>IIT Bombay, Mumbai, Maharashtra.</i>
Mr. Franshu Mahipal, <i>Tantia University, Sri Ganganagar, Rajasthan.</i>
Ms. Krishna Lalitkumar Purohit, <i>Kamani Science College & Prataprai Arts College, Amreli, Gujarat.</i>
Mrs. Mariyam Khan, <i>University of Mumbai.</i>
Dr. Oorna Mitra, <i>Indian Statistical Institute, Bangalore Center, Karnataka.</i>
Dr. Shivani Goel, <i>Mumbai.</i>
Dr. Tadkeshwar Nath Mishra, <i>School of Engineering and Technology, SAGE University, Bhopal (Teacher Participant).</i>

Centre: SMIT Sikkim

Local Coordinator (Level O)

Biswajit Deb, SMIT, Sikkim

Level O	
Subjects	Name and Address
Foundations	Dhiren Kumar Basnet, Tezpur University, Tezpur, Assam, dbasnet@tezu.ernet.in
Real Analysis	P. S. Srinivasan, Bharathidasan University, Tiruchirappalli, Tamil Nadu, pssrinimaths@gmail.com
Linear Algebra	Biswajit Deb, Sikkim Manipal Institute of Technology, Majitar, Sikkim, biswajittalk@gmail.com
Number Theory	Diganta Bora, IISER Pune, Maharashtra, dborah@iiserpune.ac.in
Riemann Integration	Bikash Chakraborty, RKMV Centenary College Rahara, West Bengal, bikashchakraborty@gmail.com

Mentors (Level O)
Mr. Anjan Gautam, Sikkim Manipal Institute of Technology, Sikkim.
Mr. Bishal Bhandari, Sikkim Manipal Institute of Technology, Sikkim.
Dr. Khwairakpam Herachandra Singh, Manipur University, Imphal, Manipur.
Mr. Niraj Sapkota, Sikkim Manipal Institute of Technology, Sikkim.
Mr. Puran Dangal, Sikkim Manipal Institute of Technology, Sikkim.

"The art of teaching is the art of assisting discovery."

– Mark van Doren

"It is the supreme art of the teacher to awaken joy in creative expression and knowledge."

– Albert Einstein

CUTN (Participants)

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
CUTN-LO-03	Mr. Maangalik Pravinbhai Barchha, St. Xavier's College, Ahmedabad, Gujarat.
CUTN-LO-04	Mr. Bhavik Dodda, Sardar Vallabhbhai National Institute Of Technology Surat, Gujarat.
CUTN-LO-05	Mr. Rokan Karunakar Shetty, K J Somaiya College Of Science And Commerce Mumbai City, Maharashtra.
CUTN-LO-06	Ms. Mayuri Gokul Karambele, Arts, Commerce And Science College Lanja Ratnagiri, Maharashtra.
CUTN-LO-08	Mr. R Vishwanath, Loyola Academy Medchal-Malkajgiri, Telangana.
CUTN-LO-10	Mr. Bibek Rout, National Institute Of Technology Warangal Warangal, Telangana.
CUTN-LO-11	Ms. Deebaguntlashashera, Silver Jubilee Govt. College (autonomous) Kurnool, Andhra Pradesh.
CUTN-LO-12	Ms. Yallasripunyavathi, Silver Jubilee Govt. College (autonomous) Kurnool, Andhra Pradesh.
CUTN-LO-13	Ms. K Kanika, Christ (Deemed To Be University) Bangalore Urban, Karnataka.
CUTN-LO-14	Mr. Bezal Prabhu Stephen, Azim Premji University Bangalore Urban, Karnataka.
CUTN-LO-15	Ms. Reddy Tulasi, Azim Premji Univesity Bangalore Urban, Karnataka.
CUTN-LO-16	Mr. Sathvik Acharya, St. Aloysius College (autonomous) Dakshina Kannada, Karnataka.
CUTN-LO-17	Ms. Sinchana Nayak, St. Aloysius College (autonomous) Dakshina Kannada, Karnataka.
CUTN-LO-18	Mr. Arit Das, Pondicherry University Puducherry, Puducherry.
CUTN-LO-19	Ms. Nayanashibu, Pondicherry University Puducherry, Puducherry.
CUTN-LO-21	Ms. Evana Joseph, Central University Of Tamil Nadu Tiruvarur, Tamil Nadu.
CUTN-LO-22	Ms. Manasvini V, Central University Of Tamilnadu Thiruvarur, Tamil Nadu.

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
CUTN-LO-23	Ms. Sadhana G, Central University Of Tamilnadu Tiruvarur, Tamil Nadu.
CUTN-LO-24	Ms. Jasmine J, Bishop Heber College (autonomous) Tiruchirappalli, Tamil Nadu.
CUTN-LO-25	Ms. Amritha. M, The Gandhigram Rural Institute (deemed To Be University)Dindigul, Tamil Nadu.
CUTN-LO-26	Ms. Kalpana Shri V, Fatima College Of Arts And Science Madurai, Tamil Nadu.
CUTN-LO-27	Mr. S Sathish Karthik, Ayya Nadar Janaki Ammal College (autonomous) Virudhunagar, Tamil Nadu.
CUTN-LO-29	Ms. Ahalya P, Namakkal Kavignar Ramalingam Govt. Arts College For Women Namakkal, Tamil Nadu.
CUTN-LO-30	Ms. Keerthi. P, Gobi Arts & Science College Erode, Tamil Nadu.
CUTN-LO-32	Ms. Habhipriya Vp, Dr. N. G. P. Arts And Science College Coimbatore, Tamil Nadu.
CUTN-LO-33	Ms. Ishah K K, St Joseph's College (autonomous) Devagiri Kozhikode, Kerala.
CUTN-LO-34	Ms. Lakshmi P V, Thunchan Memorial Govt. College Tirur Malappuram, Kerala.
CUTN-LO-35	Ms. Rasha. N, Dr. Ghafoor Memorial M. E. S. Mampad College (autonomous) Malappuram, Kerala.
CUTN-LO-36	Kum. Aleyiga Vasudevan, Govt. Victoria College Palakkad, Kerala.
CUTN-LO-37	Ms. Nandana K M, St. Thomas College (autonomous) Thrissur, Kerala.
CUTN-LO-38	Mr. Praveen K C, St. Thomas College (autonomous) Thrissur, Kerala.
CUTN-LO-40	Mr. Shinjan Mukherjee, Maulana Azad College Kolkata, West Bengal.
CUTN-LO-41	Mr. Sahitya Biswas, Ramakrishna Mission Vivekananda Centenary College North 24 Parganas, West Bengal.
CUTN-LO-43	Mr. Ayush Kumar Gupta, Buxi Jagabandhu Bidyadhar Autonomus College Khordha, Odisha.

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
CUTN-LO-44	Mr. Divesh Bhalotiya, Institute Of Mathematics & Applications Khordha, Odisha.
CUTN-LO-45	Mr. Tanush Seal, Institute Of Mathematics & Applications Khordha, Odisha.
CUTN-LO-46	Mr. Sandip Choudhury, Ravenshaw University Cuttack, Odisha.
CUTN-LO-47	Sri. Rohitkumar Patel, Larambha College, Larambha Baragarh, Odisha.
CUTN-LI-05	Mr. Mohil Bharti, Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya, Palampur Kangra, Himachal Pradesh.
CUTN-LI-06	Mr. Sahil Kumar, Sidharth Govt. Degree College Hamirpur, Himachal Pradesh.
CUTN-LI-07	Mr. Sumit Kumar, Cluster University Of Jammu Jammu, Jammu and Kashmir.
CUTN-LI-10	Ms. Asmita Gupta, Mahila Maha Vidyalaya, BHU Varanasi, Uttar Pradesh.
CUTN-LI-11	Kum. Priyanshi Agarwal, Kamta Prasad Sundar Lal Saket PG College Ayodhya, Uttar Pradesh.
CUTN-LI-13	Ms. Muskan Yadav, Banasthali Vidyapith Tonk, Rajasthan.
CUTN-LI-14	Mr. Kamliya Jignesh Mehurbhai, Kamani Science College And Prataprai Arts College Amreli, Gujarat.
CUTN-LI-16	Ms. Krupa Pareshgar Gusai, Tolani College Of Arts & Science Kutch, Gujarat.
CUTN-LI-17	Ms. Divyaben Sureshbhai Rana, Vitthalbhai Patel & Rajratna P. T. Patel Science College Anand, Gujarat.
CUTN-LI-18	Mr. Chetan Malik, Smt. Devkiba Mohansinhji Chauhan College Of Commerce And Science Dadra and Nagar Haveli, Dadra & Nagar Haveli and Daman & Diu.
CUTN-LI-19	Mr. Sundarm Jayprakash Sharma, K. J. Somaiya College Of Science And Commerce Mumbai, Maharashtra.
CUTN-LI-20	Ms. Asawari Sharad Athawale, Ramniranjan Jhunjhunwala College Mumbai, Maharashtra.
CUTN-LI-21	Ms. Pranjali Pradeep Rawool, St. Xavier's College North Goa, Goa.

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
CUTN-LI-22	Kum. Rugved Navnath Barde, RB Narayanrao Borawake College Ahmednagar, Maharashtra.
CUTN-LI-23	Mr. Pramod Avinash Gurav, Arts, Commerce And Science College Lanja Ratnagiri, Maharashtra.
CUTN-LI-24	Mr. Suraj Rameshwar Tidke, CHM College Of Arts, Science & Commerce Thane, Maharashtra.
CUTN-LI-26	Ms. Deeksha Verma, Pt. Ravishankar Shukla University Raipur, Chhattisgarh.
CUTN-LI-27	Mr. Rananjay Nair, Krea University Chittoor, Andhra Pradesh.
CUTN-LI-29	Ms. Bhoomika Vasudeva Udupa, Poornaprajna College Udupi, Karnataka.
CUTN-LI-30	Mr. Sanand G Dev, Pondicherry University Puducherry, Puducherry.
CUTN-LI-31	Ms. Ishita Verma, Central University Of Tamil Nadu Thiruvavur, Tamil Nadu.
CUTN-LI-32	Ms. Samyuktha R, Central University Of Tamilnadu Thiruvavur, Tamil Nadu.
CUTN-LI-33	Ms. Kavya Dharshni M A, Seethalakshmi Ramaswami College Tiruchirappalli, Tamil Nadu.
CUTN-LI-34	Mr. Mathish M, Ayya Nadar Janaki Ammal College Virudhunagar, Tamil Nadu.
CUTN-LI-35	Mr. Jeswin Titus Jv, Manonmaniam Sundaranar University Tirunelveli, Tamil Nadu.
CUTN-LI-36	Ms. Abenaya M A, Tirunelveli Dakshina Mara Nadar Sangam College Tirunelveli, Tamil Nadu.
CUTN-LI-37	Ms. V M Devasri, Vellalar College For Women Erode, Tamil Nadu.
CUTN-LI-38	Sri. Bavanesh, PSG College Of Arts & Science Coimbatore, Tamil Nadu.
CUTN-LI-40	Mr. Dhruv S N, Amrita School Of Arts And Sciences, Kochi Campus Ernakulam, Kerala.
CUTN-LI-41	Ms. Gatha S Kumar, Deva Matha College Kottayam, Kerala.
CUTN-LI-42	Mr. Thomas Raju, Govt. College Alappuzha, Kerala.

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
CUTN-L1-45	Mr. Swarnava Kundu, Ramakrishna Mission Vivekananda Centenary College North 24 Parganas, West Bengal.
CUTN-L1-47	Ms. Mamta Adhikari, Nar Bahadur Bhandari Degree College East Sikkim, Sikkim.
CUTN-L1-48	Mr. Sachin Adhikari, Nar Bahadur Bhandari Degree College East Sikkim, Sikkim.
CUTN-L1-49	Mr. Omkar Pradhan, Buxi Jagabandhu Bidyadhar Autonomus College Khordha, Odisha.
CUTN-L1-50	Mr. Ashmit Gurey, Institute Of Mathematics & Applications Khordha, Odisha.
CUTN-L1-51	Mr. P Tapan Kumar Patro, Binayak Acharya Degree College Ganjam, Odisha.
CUTN-L1-52	Mr. Bikash Kumar Sahu, Rayagada Autonomous College Rayagada Rayagada, Odisha.
CUTN-L1-54	Ms. Aheli Sen, Gurucharan College Cachar, Assam.
CUTN-L1-56	Mr. Deepjyoti Sarkar, Ramthakur College West Tripura, Tripura.
CUTN-L1-57	Mr. Rahul Debnath, National Institute Of Technology Agartala West Tripura, Tripura.
CUTN-L1-58	Ms. Ayushirani, Patna Women's College Patna, Bihar.
CUTN-L1-59	Mr. Sarvjeet Rana, Central University Of South Bihar Gaya, Bihar.
CUTN-L1-60	Ms. Khushi Parween, S.S.L.N.T. Mahila Mahavidyalaya Dhanbad, Jharkhand.
CUTN-L2-03	Mr. Sudeep Gour, Delhi Technological University Shahbad Daultpur, Delhi.
CUTN-L2-04	Ms. Disha Vij, Indian Institute Of Technology, Mandi Mandi, Himachal Pradesh.
CUTN-L2-07	Mr. Rajagobalan, Central University Of Jammu Samba, Jammu and Kashmir.
CUTN-L2-10	Mr. Rohit Yadav, University Of Allahabad Prayagraj, Uttar Pradesh.
CUTN-L2-11	Mr. Mohd Faizan, Mahatma Jyotiba Phule Rohilkhand University (campus) Bareilly, Uttar Pradesh.

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
CUTN-L2-13	Ms. Ghancha Janvi, St Xavier's College (autonomous) Ahmedabad, Gujarat.
CUTN-L2-14	Ms. Prapti Maheshbhai Tala, Indian Institute Of Technology Gandhinagar Gandhinagar, Gujarat.
CUTN-L2-15	Mr. Sheth Shreyansh Chandreshbhai, Sardar Patel University Anand, Gujarat.
CUTN-L2-16	Mr. Mistry Tap Daxeshkumar, The Maharaja Sayajirao University Of Baroda Vadodara, Gujarat.
CUTN-L2-17	Mr. Choudhary Gopal Otaram, Institute Of Chemical Technology, Mumbai Mumbai City, Maharashtra.
CUTN-L2-18	Ms. Sonam Sadguru Godkar, Goa University North Goa, Goa.
CUTN-L2-19	Mr. Kadam Aditya Arvind, Swami Ramanand Teerth Marathwada University Nanded, Maharashtra.
CUTN-L2-20	Kum. Siddhi Jain, Devi Ahilya Vishwavidyalaya Indore, Madhya Pradesh.
CUTN-L2-21	Mr. Anshul, Indian Institute Of Technology, Indore Indore, Madhya Pradesh.
CUTN-L2-22	Ms. Deblina Banerjee, National Institute Of Technology Warangal Warangal, Telangana.
CUTN-L2-23	Ms. Shreelekshmi R, Indian Institute Of Science Education And Research Tirupati, Tirupati, Andhra Pradesh.
CUTN-L2-24	Ms. V S Dhanushuya, Christ (deemed To Be University) Bengaluru, Karnataka.
CUTN-L2-26	Ms. Bibina Michael, Central University Of Karnataka Gulbarga, Karnataka.
CUTN-L2-27	Mr. Gunasekar, Presidency College Chennai, Tamil Nadu.
CUTN-L2-29	Ms. Vismaya S, Central University Of Tamil Nadu, Tiruvarur, Tamil Nadu.
CUTN-L2-30	Kum. Keerthana, Seethalakshmi Ramaswami College Tiruchirappalli, Tamil Nadu.
CUTN-L2-31	Ms. Thillai Arunthathi K, Bharathidasan University Tiruchirappalli, Tamil Nadu.
CUTN-L2-32	Ms. P. Gokularani, The Standard Fireworks Rajaratnam College For Women(autonomous) Virudhunagar, Tamil Nadu.

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
CUTN-L2-33	Ms. Sowmiya V, Erode Arts And Science College Erode, Tamil Nadu.
CUTN-L2-34	Ms. Haripriya Sivakumar, PSGR Krishnammal College For Women Coimbatore, Tamil Nadu.
CUTN-L2-35	Ms. Charukeshini S, Sri G. V. G. Visalakshi College For Women Tiruppur, Tamil Nadu.
CUTN-L2-37	Ms. Theertha T, Department Of Mathematical Sciences Kannur University Kannur, Kerala.
CUTN-L2-38	Kum. Manjushree Shivani B S, Central University Of Kerala Kasaragod, Kerala.
CUTN-L2-39	Ms. R Nivedita, Kerala School Of Mathematics Kozhikode, Kerala.
CUTN-L2-40	Ms. Vahiba Siddhiq K, St. Thomas College (autonomous) Thrissur, Kerala.
CUTN-L2-41	Ms. Safa Mujeeb Rahman, University Of Kerala Thiruvananthapuram, Kerala.
CUTN-L2-42	Ms. Faria Ahmed, Jadavpur University Kolkata, West Bengal.
CUTN-L2-43	Mr. Rakesh Mandal, Indian Association For The Cultivation Of Science Kolkata, West Bengal.
CUTN-L2-45	Ms. Sangita Mahato, Sidho Kanho Birsha University Purulia, West Bengal.
CUTN-L2-46	Ms. Rajeshwari Sharma, Sikkim University, Gangtok, East Sikkim Gangtok, Sikkim.
CUTN-L2-47	Mr. Pravin Neopaney, Sikkim Manipal Institute Of Technology Gangtok, Sikkim.
CUTN-L2-48	Ms. Swaha Saina Pattnaik, Buxi Jagabandhu Bidyadhar Autonomus College Khordha, Odisha.
CUTN-L2-50	Ms. Subhashreebaliarsingh, Ravenshaw University Cuttack, Odisha.
CUTN-L2-51	Mr. Suraj Kumar Tripathy, Binayak Acharya Degree College, Berhampur, Ganjam, Odisha Ganjam, Odisha.
CUTN-L2-52	Ms. Puja Solaiappan, National Institute Of Technology Rourkela Sundargarh, Odisha.
CUTN-L2-53	Mr. Archit Deb, Indian Institute Of Technology Guwahati Kamrup, Assam.

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
CUTN-L2-56	Mr. Subhasis Biswas, Tripura University West Tripura, Tripura.
CUTN-L2-57	Ms. Rani Kumari, Patna University Patna, Bihar.
CUTN-L2-59	Mr. Chandra Prakash Gupta, Central University Of South Bihar Gaya, Bihar.
CUTN-L2-60L	Ms. Harini S, Ramanujan Institute of Advance Study in Mathematics Chennai, Tamil Nadu.

Dinner and Post Dinner Discussions



Init Math Uttarakhand



Init Math Uttarakhand



Follow up 2023



MTTS 2023, IIT Madras

ICT Mumbai (Participants)

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
ICTM-LO-05	Sri. Jatin Kumar, Chandigarh University Mohali, Punjab.
ICTM-LO-08	Mr. Mubarak Choudhary, Panjab University Chandigarh, Chandigarh.
ICTM-LO-09	Mr. Arun Kumar, Govt. College Shimla, Himachal Pradesh.
ICTM-LO-13	Mr. Jayin Khanna, Shiv Nadar University GautamBuddha Nagar, Uttar Pradesh.
ICTM-LO-16	Ms. Komalbhambri, The University Of Petroleum And Energy Studies Dehradun, Uttarakhand.
ICTM-LO-17	Ms. Abhilasha, Dev Sanskriti Vishwavidyalaya Haridwar, Uttarakhand.
ICTM-LO-18	Ms. Aradhya Singh, Dev Sanskriti Vishwavidyalaya Haridwar, Uttarakhand.
ICTM-LO-20	Mr. Aditya Gupta, Kisan PG College Bahraich Bahraich, Uttar Pradesh.
ICTM-LO-21	Mr. Aditya Vijwani, Dayalbagh Educational Institute Agra, Uttar Pradesh.
ICTM-LO-22	Ms. Gouri Garg, Banasthali Vidyapith Tonk, Rajasthan.
ICTM-LO-23	Mr. Himanshu, Shri Shyam Co-education College Hanumangarh, Rajasthan.
ICTM-LO-24	Ms. Hetvi Ladhani, Shree DKV Arts And Science College Jamnagar, Gujarat.
ICTM-LO-25	Mr. Geeda Balvant Bhupatbhai, Kamani Science College Amreli, Gujarat.
ICTM-LO-27	Ms. Chaitali Vinod Belsare, The Maharaja Sayajirao University Of Baroda Vadodara, Gujarat.
ICTM-LO-28	Kum. Anisha Meena, Maharaja Sayajirao University Vadodara, Gujarat.
ICTM-LO-29	Ms. Mahima Shrivastav, Smt. Devkiba Mohansinhji Chauhan College Of Commerce And Science, Silvassa Dadra and Nagar Haveli, Dadra & Nagar Haveli and Daman & Diu.
ICTM-LO-30	Ms. Sanju Yadav, Smt. Devkiba Mohansinhji Chauhan College Of Commerce And Science, Silvassa Dadra and Nagar Haveli, Dadra & Nagar Haveli and Daman & Diu.

MTTS Selection Id (MTTS2024 -)	Name and Institute Details
ICTM-LO-32	Mr. Dhruv Patil, Kishinchand Chellaram College Mumbai, Maharashtra.
ICTM-LO-35	Ms. Supriya Yeshwant Gawas, Ganpat Parsekar College Of Education North Goa, Goa.
ICTM-LO-36	Ms. Nalla Pooja Kondayya, D. B. F. Dayanand College Of Arts And Science Solapur, Maharashtra.
ICTM-LO-37	Ms. Kayanat Shanavaj Hussien, Smt Chandibai Himatmal Mansukhani College Thane, Maharashtra.
ICTM-LO-38	Ms. Priya Chaurasiya, R. K. Talreja College Thane, Maharashtra.
ICTM-LO-39	Kum. Richa Pathak, Regional Institute Of Education Bhopal, Madhya Pradesh.
ICTM-LO-40	Ms. Aanchal Tiwari, Kalinga University Raipur, Chhattisgarh.
ICTM-LO-42	Mr. Aman Gupta, Govt E V Post Graduate College Korba, Korba, Chhattisgarh.
ICTM-LO-43	Ms. Sakshi Tigga, Govt E V Post Graduate College Korba, Korba, Chhattisgarh.
ICTM-LO-44	Ms. G. Sivaranjani, Ethiraj College For Women Chennai, Tamil Nadu.
ICTM-LO-45	Ms. Amritha Pradeep, Stella Maris College (autonomous), Chennai, Tamil Nadu.
ICTM-LO-46	Ms. Janani. V, Agurchand Manmull Jain College, Chennai, Tamil Nadu.
ICTM-LO-47	Mr. Sivaram, St Joseph's College, Tiruchirappalli, Tamil Nadu.
ICTM-LO-48	Mr. Ramsankar. S, The American College Madurai, Tamil Nadu.
ICTM-LO-50	Ms. Shalini . M, PSGR Krishnammal College For Women Coimbatore, Tamil Nadu.
ICTM-LO-51	Kum. Keerthana T M, PSG College Of Arts & Science Coimbatore, Tamil Nadu.
ICTM-LO-52	Mr. Aman Mittal, RIE Bhubaneswar Kordha, Odisha.
ICTM-LO-53	Mr. Roshan Sahu, Trust Fund Degree College Bargarh, Odisha.

SMIT (Participants)

MTTS Selection Id (MTTS2024-)	Name and Institute Details
SMIT-LO-03	Ms. Divya Jain, Guru Nanak Dev University, Amritsar, Punjab.
SMIT-LO-04	Ms. Suhani Pasricha, Thapar Institute Of Engineering And Technology, Patiala, Punjab.
SMIT-LO-07	Ms. Tarunya Venkat, Shiv Nadar University, Gautam Buddha Nagar, Uttar Pradesh.
SMIT-LO-08	Ms. Riya Yadav, University Of Allahabad, Prayagraj, Uttar Pradesh.
SMIT-LO-09	Kum. Deepanshi Agarwal, Banaras Hindu University, Varanasi, Uttar Pradesh.
SMIT-LO-11	Ms. Aditi Som, Bethune College, Kolkata, West Bengal.
SMIT-LO-13	Ms. Moumita Paul, Bijoy Krishna Girls' College, Howrah, West Bengal.
SMIT-LO-16	Ms. Amrita Sharma, Nar Bahadur Bhandari Degree College, Gangtok, Sikkim.
SMIT-LO-17	Mr. Awaneesh Sharma, Nar Bahadur Bhandari Degree College, East Sikkim, Sikkim.
SMIT-LO-18	Mr. Gyanendrachamlagai, Nar Bahadur Bhandari Degree College, East Sikkim, Sikkim.
SMIT-LO-21	Ms. Aishma Tamang, Sikkim Manipal Institute Of Technology, East Sikkim, Sikkim.
SMIT-LO-23	Mr. Anurag Sharma, Sikkim Manipal Institute Of Technology, East Sikkim, Sikkim.
SMIT-LO-24	Mr. Rohan Basnett, Sikkim Manipal Institute Of Technology, East Sikkim, Sikkim.
SMIT-LO-27	Ms. Krishna Tulasi Das, Rajdhani Degree College, Khordha, Odisha.
SMIT-LO-28	Ms. Soumyapriyadarshiniswain, Rama Devi Womens University, Khordha, Odisha.
SMIT-LO-30	Ms. Geetanjali Panda, Binayak Acharya Degree College, Ganjam, Odisha.
SMIT-LO-31	Ms. Ayushi Panda, Govt Science College Chatrapur, Ganjam, Odisha.
SMIT-LO-36	Mr. Pejuse Dey, B. H. College, Barpeta, Assam.

MTTS Selection Id (MTTS2024-)	Name and Institute Details
SMIT-LO-37	Sri. Bhargav Pratim Bora, Jorhat Institute Of Science And Technology, Jorhat, Assam.
SMIT-LO-46	Mr. Sukamal Paul, Tripura University, West Tripura, Tripura.
SMIT-LO-47	Mr. Sagar Rudra Paul, ICFAI University, West Tripura, Tripura.
SMIT-LO-48	Mr. Akashdeep Sinha, Ramkrishna Mahavidyalaya, Unakoti Tripura, Tripura.
SMIT-LO-49	Ms. Richa Kumari, Patna Women's College, Patna, Bihar.
SMIT-LO-50	Mr. Nikhil Sharma, Patna Science College, Patna, Bihar.
SMIT-LO-51	Mr. Sanyasi Kumar, Patna Science College Patna, Patna, Bihar.
SMIT-LO-52	Mr. Nitishkumar, College Of Commerce, Arts & Science, Patna, Bihar.
SMIT-LO-53	Mr. Vivek Kumar Gupta, Ganesh Lal Agrawal College, Palamu, Jharkhand.
SMIT-LO-56	Mr. Aaryan Daksh, Doranda College, Ranchi, Jharkhand.
SMIT-LO-57	Mr. Abhinav Kumar, Birla Institute Of Technology, Mesra, Ranchi, Jharkhand.



Culturals at InitMath Assam

MTTS2024 FAQ

The following is a list of some of the frequently asked questions about the programme, and their answers.

For how many years has the programme been conducted?

The programme has been conducted since 1993.

Who organizes the MTTS Programmes?

Since its inception, the MTTS programme (as the annual summer camp was originally referred to) has been organized by a group of committed mathematicians under the leadership of Prof. S. Kumaresan, while he had been working in Mumbai University and University of Hyderabad. As the activities of the Programme broadened, a national core committee was formed to advise, organize, and supervise various aspects of the MTTS Programmes. On the occasion of the silver jubilee of MTTS, the members of this committee formed a non-profitable educational trust entitled "MTTS TRUST " to carry forward this endeavour. From 2018, all programmes under the MTTS umbrella are being conducted by the MTTS Trust.

What is the basis of selection for participating in the programme?

The selection depends mainly on the following two criteria: (i) a consistent academic record and (ii) the recommendation letter of a teacher, who is mathematically well-acquainted with the applicant. The selection is very much influenced by the specifics rather than by the general comments in the recommendation.

How are the participants assigned the centres?

Based on geographical reasons and exam schedules of the students. Applicants should mention the tentative dates of the examinations if they want us to consider this aspect while assigning them the centre.

Is there any fee to be paid by the students?

Absolutely none. In fact, the Trust reimburses travel (sleeper/2nd class railway fare by the shortest route), provides books and reading materials, and gives free lodging and food during the period of the programme to all the participants.

What do I do if my name appears in the selection list but no letter of admission is received?

The admission/ selection letter is sent to the selected candidates by email. Visit the MTTS site where the selection list is available. Look for instructions to be followed in case you are selected but did not receive the admission letter.

Where will the participants be accommodated?

The participants are usually accommodated in the hostels of the host institution. There will be separate hostels for boys and girls.

Is there any scholarship available for the participants (after the programme) for pursuing higher studies in mathematics?

No, but there may be follow-up activities for students from the current camp.

Will the participants receive any certificate at the end of the programme?

All participants who attend the programme for the entire period will receive a certificate of participation.

Will the programme help the students in getting jobs? In getting admissions in good institutions?

The main aim of the programme is to train the students so that they can work independently, achieve a high level of confidence in the learning/understanding of mathematics, to give them a global perspective about mathematics, and to make them enjoy doing mathematics. We do NOT think of this camp as a job-training programme. However, the knowledge and attitude acquired during the programme, if further cultivated by the participants, seem to help them achieve better goals in their academic career. It is also envisaged that if the participants choose the teaching profession, they will be able to impart mathematical knowledge in a more interactive manner and motivate students for further study.

Can you say something about the way the training is carried out? How are the courses different from the ones we have at the colleges?

Radically different. In fact, it takes about three days for the participants to get used to our way of doing things. The faculty is from various leading institutions of the country and is not confined to the host institute. People who are experts in the field, who are known for their teaching and have a commitment towards high quality mathematics in India are chosen to teach the courses. As a rule, each course is taught by a single expert. This paves the way for better interaction (over a period of 4 weeks) between the faculty and students and also imparts a perspective of the field among the students. The faculty is requested to be present for all the sessions not for their sessions only! All the four teachers of a level actively help the students during the sessions. The teachers identify the difficulties of the individual students. Giving individual attention is one of the unique features of this programme. Some reading material is also provided.

The teachers keep asking questions, sometimes well-formulated, sometimes vague, to demonstrate how mathematics is discovered. They often develop a proof from the ideas given by the students and ask them to write in the way a textbook will present it. There will be a great deal of pressure on you to think on your own and

actively participate in the course. Unless you are keen and ready to work very hard, please do not apply for the programme. But if you are seriously interested in pursuing higher mathematics, this programme will be immensely useful to you.

The programme also provides a platform for students with (linguistically, cultural-ly, and mathematically) varied backgrounds to come together and interact with peers and experts in the field. This serves two purposes: i) the participants come to know where they stand academically and what they must do to bring out their full potential and ii) they establish a rapport with other participants and teachers which help them shape their career in mathematics.

Are there tests at the end of the programme?

It is our belief that one should learn mathematics for its own sake and for the love of it rather than focusing one's attention on the tests.

However, there will be writing assignments for each of the courses. You will be asked to submit them the next day. These written assignments will be corrected and may be discussed in the classroom or individually. The main aim of this exercise is to improve your writing skills. You may discuss your assignments with anybody and consult books if necessary. But the most important requirement is that at the time of writing, you should be on your own. There may also be online self-assessment activities. These are not intended to grade you, but are rather aimed at giving you an opportunity to keep track of your improvements during the programme. Take these quizzes seriously.

Can you say something about the student seminars?

The participants interested in giving seminars should talk to a teacher of their level. Depending on the interest of the participants, the teacher will suggest some topics and reading material. The participant may discuss the topic with the teachers to acquire more insight before giving the seminar. Usually, such seminars are of 15-30 minutes duration. Sometimes, a longer presentation is shared by a group of students. While they present the topic, the speakers among them are chosen randomly. This ensures that each member of the group understands, and is comfortable with the entire topic.

Is it possible to change the Level after joining the Programme?

Yes. In fact, we offer even more flexibility. If some participants of a particular level know and are good at a particular subject of their level, they may be allowed to go for the same subject at a higher level. Similarly, if they lack either the background or find a particular subject difficult, they may attend the same subject at a lower level. The timetable is drawn up to facilitate this migration. For example, Algebra will be taught at the same time for Levels I and II.

What subjects are taught? Are they pure or applied?

The emphasis is on so-called pure mathematics. The courses are on linear algebra,

algebra, analysis, geometry, number theory, topology, etc. It is our firm belief that a deeper understanding of these subjects is a must whether you wish to pursue pure or applied mathematics.

What is the medium of instruction?

The medium of instruction is English. It is very essential that the participants should be able to communicate in English, at least in mathematics. If you have any difficulty, please talk to a teacher or mentor of your level. We shall find a way to mitigate your difficulty.

Do we have to have a great deal of background in mathematics?

No. The courses are usually designed in such a way that 30-40% of the concepts may already be familiar to most of the students. The main aim of the course, as was mentioned above, is to promote thinking. As a matter of fact, it was observed in the past that the students who learn a topic for the first time in the programme have performed better as the courses progressed. It is not our aim to introduce a lot of jargon to the students. (You cannot master any language by learning the dictionary by heart!) Instead, we introduce the very basic concepts, use well-chosen examples, and train the students thoroughly.

Can we join the programme a few days after the inaugural day?

It takes about three days for the students to get used to our method of teaching. Anybody who joins the programme after the third day is at a distinct disadvantage, as the other participants would be in a better position to participate in the discussions. Thus, the students who join later will feel miserable due to their inability to participate actively and may even lose their confidence. Hence, as a rule, nobody is allowed to join the programme after the second day. The only exceptions would be former participants who performed well in a previous camp, but prior approval will be needed in these cases.

PLEASE do not send requests for joining the programme on or after the 3rd day.

A class-mate of mine is given admission. I know that he/she is not going to participate and is going to cancel the admission. Can I replace him/her in the camp?

We are aware that some of the selected students have a very genuine problem, namely the clash of dates of examinations with that of our camps. Students with this problem fail to participate, since they are not allowed to join after the second day of the programme. Due to unforeseen circumstances, even those who confirmed their participation often fail to join the programme. To avoid vacancies created by such incidents, we offer admission to 50-55 applicants though our sanctioned strength is 35 per level. Our overbooking takes care of the vacancies arising out of this problem. Note that there are about 6000+ autonomous institutions such as universities, colleges and institutes in our country. It would be impossible to find even a single day which will be convenient to students of all these institutions. To mitigate such issues, we have floated the concept of Initiation into Mathematics (InitMath) and Overture

camps, which are organized at the regional level.

Are there some programmes for mathematics teachers similar to MTTs?

To spread the MTTs methodology to a larger number of students, a camp for teachers called Pedagogical Training for Mathematics Teachers (PTMT) was started over a decade ago. The suggestion for this came from the participants of earlier camps. The participants of PTMT are introduced to the MTTs methodology, so that they can adopt it in their regular teaching. More details on this programme can be obtained from the MTTs website.

How can I organise an MTTs camp in my college/ university/ institution?

The application process for organising any of the camps under the MTTs umbrella is detailed on the MTTs Trust website. This includes Overture, InitMath, PTMT or any of the Summer Camps.

If you are a faculty and are enthusiastic about organising one of these at your institution, you can apply online by following the process described at <https://mtts.org.in/training-programmes/organize-mttts-initmath-ptmt>.

If you are a student, who wishes to have such a camp at your institute, you may request some interested faculty member to apply for the same.

A question less frequently asked: How can we help the MTTs Programme?

In many ways. For examples of what other alumni have done, see the section on alumni contributions starting on Page 23". Furthermore, here are some things that you can do.

To start with, you may inform your juniors, and others, who exhibit a certain amount of motivation, and who have an aptitude for mathematics, about this programme and encourage them to apply. Having undergone this training, you will be in a better position to judge which students from your college will be suitable for this activity more than the teachers, who may not have any idea of this programme. You may distribute copies of the application and recommendation form to those interested.

Secondly, you may share a copy of the Souvenir with committed teachers, and students of your college. This will enable them to encourage suitable students to future camps. Instead of keeping the Souvenir as a private trophy, you may also give it to the teacher who recommended you.

Thirdly, you may offer seminars at your institute about the way we teach. Your friends will also have a taste of the way mathematics is taught in a typical MTTs camp.

Fourthly, you may inform us of teachers who are likely to be interested in this mode of teaching. We are constantly on the look-out for motivated teachers who will be ready to sacrifice their vacation and offer training in this programme. We also allow teachers to participate in this programme if they want to know how training is imparted. For this purpose, interested teachers may visit for a week or two during the

camp. They should write to the MTTS Trust about this. Such participation is only by invitation. Those invited by us will be reimbursed the travel expenses and provided the local hospitality.

If you want students in and around your college to benefit from MTTS teaching methodology, you can request your teachers to organise one of the MTTS programmes at your college.

Finally, you can also help financially by donating to the MTTS Trust. So far the Trust has been able to organize a limited number of camps with the help of funding from the National Board for Higher Mathematics (NBHM). Expansion of these programmes will require a lot of infrastructural resources, both human as well as material. The financial implications require the support of MTTS well-wishers like you. Any amount, however small, is welcome. For more details, please see the back cover.

Group Discussions



InitMath Assam



InitMath Sikkim



InitMath Punjab



Summer Camp 2023, IIT Dhanbad

"Newton, when questioned about his method of work, could give no other answer but that he was wont to ponder again and again on a subject... Scientists and artists both recommend persistent labour."

– E. Mach

"The only instruction which a teacher can give, in my opinion, is to think in front of his students."

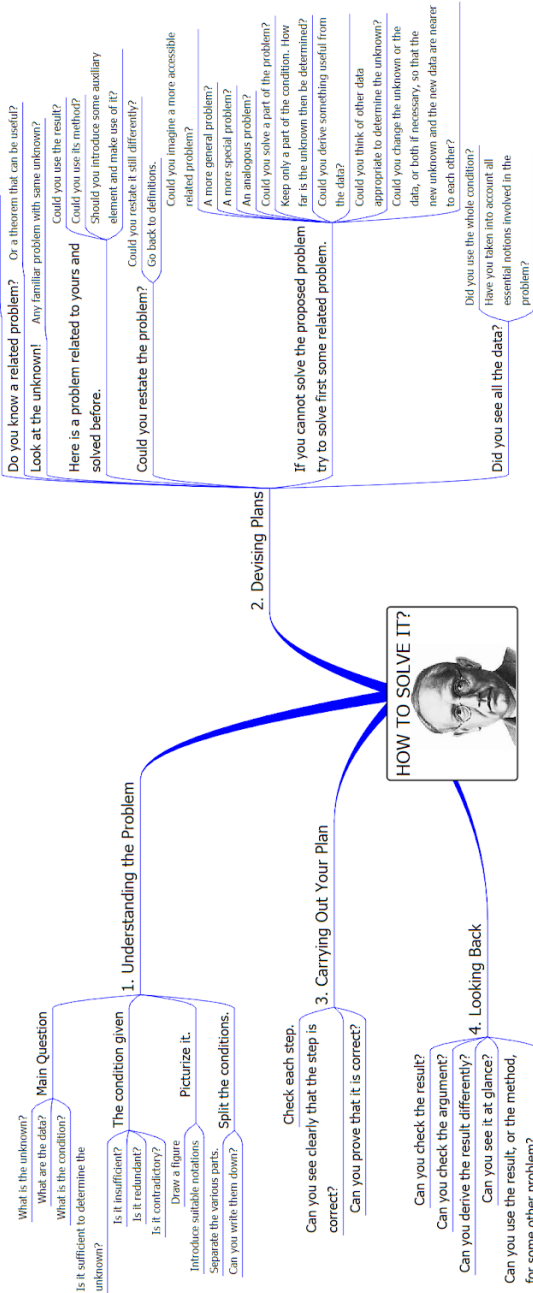
– Henri Lebesgue

How to derive the maximum benefit out of the programme

- Take active part in the classroom discussions. As a rule, the teachers will develop the theme from the answers provided by you to their questions. Make an honest attempt to answer them. If you are afraid of making mistakes, you will never learn or improve.
- Feel free to discuss mathematics with the teachers, mentors, as well as with the participants. Mathematics is best learnt from discussions. This is also a quicker way of learning than reading books or attending lectures passively. Please work on the assignments given by the teachers on the same day. Even if you could not solve it, the mere attempt will help you follow the next day's classroom discussions, as well as the hint/ solution offered by the teacher later. Go through the excerpt from Polya's "How to Solve It?" given in the souvenir. Try your best to adopt the techniques as much as possible.
- It is not our aim to introduce you to a lot of jargon. Instead, we want to promote active learning of the subject and original thinking, to make you gain a perspective and see the essential beauty of the subject. For this reason, we have devised syllabi in such a way that they will have a lot in common with what you might have learnt already.
- As you will have less time after the day's work, we suggest that you make it a point to understand everything in the classroom itself and use the evenings to reflect up on the day's material. To achieve this, you have to be alert and stop the teachers if they go too fast or you do not understand certain points.
- Even though you will be provided a lot of reading material, we suggest that you use them sparingly during the camp. You can always learn from them once you go back! Instead try to exploit this opportunity of meeting experts and other talented students by means of interactions and discussions. One of the aims of this programme is to provide you with an intellectual atmosphere which will motivate you to rise higher and realize your potential.
- We suggest that you use your communication devices sparingly during the camp, and keep social media activity to a minimum. You can always get back to them once you go back! Instead try to exploit this opportunity of meeting experts and other talented students by means of face-to-face interactions and discussions. Remember that the camp provides you with an intellectual ambience which will motivate you to rise higher and realize your potential.

HOW TO SOLVE IT?

- George Polya



Be a partner to MTTT Endeavours

So far the MTTT Trust has been able to organize all its training camps with funding predominantly from the NBHM. However, to make the benefits of MTTT reach the large portion of the target audience, broadening of these programmes and therefore expansion of infrastructural resources, both human as well as material, will be necessitated. The financial implications require the support of MTTT well-wishers like you. In the past year, the Overture camps conducted by the Trust, as well as PTMT camps conducted in geographically remote areas, were partly funded by the donations received.

The Trust thanks its wellwishers and solicits their financial support in the future too. Any amount, however small, is welcome, from the patrons who would like to support this endeavour. The following are some headings under contributions can be made:

- For organising an InitMath/MTTS camp at a location of your choice.
- For organizing a PTMT camp on a subject or location of your choice.
- For organizing a regional Online Foundation Course in Mathematics.
- For organizing an Overture camp.
- For support for women participants.
- For scholarship for top performing participants.
- For procuring books for distribution to participants.
- For publication of programme souvenirs, articles and books.
- For maintenance of the MTTT website and online system management.
- For travel expenses to explore and identify training needs.
- For processing of applications; selection of participants.
- For organization of infrastructural facilities for the camps.
- For maintenance and running expenses of the trust .
- As a general donation.

We are very happy to inform you that the MTTT Trust has been registered under section 80G (5) (vi) of the Income tax act 1961, and hence donations are eligible for a tax benefit of 100% deduction under the Section 80G. We appeal to you to give donations to the Trust generously and hope that you will not miss this opportunity to serve the cause of mathematics in India.

Please do not forget to visit <https://4dspace.mttt.org.in/donations> and give your details for a receipt on your donations. The receipt will be sent to you by email.

The MTTT Trust thanks you for your continued support!

Note : WE CANNOT ACCEPT FOREIGN CONTRIBUTIONS as per the existing government rules. Payments from Indian citizens from Indian bank accounts alone can be accepted.

Bank Details
 Contact Details
 Name of the account: MTTT TRUST
 A/C No. 39809195527
 Name of Bank: State Bank of India
 Branch: VJTI, Matunga (Mumbai)
 IFSC Code: SBIN0011075



*Dr. Ajit Kumar,
 Managing Trustee, MTTT TRUST
 Email: mttstrust@gmail.com,
 Mobile: 9004047941*

Pedagogical Training for Mathematics Teachers (PTMT)



Department of Mathematics, Central University of Tamil Nadu

11 - 16 December 2023

PTMT Tamil Nadu

Credits

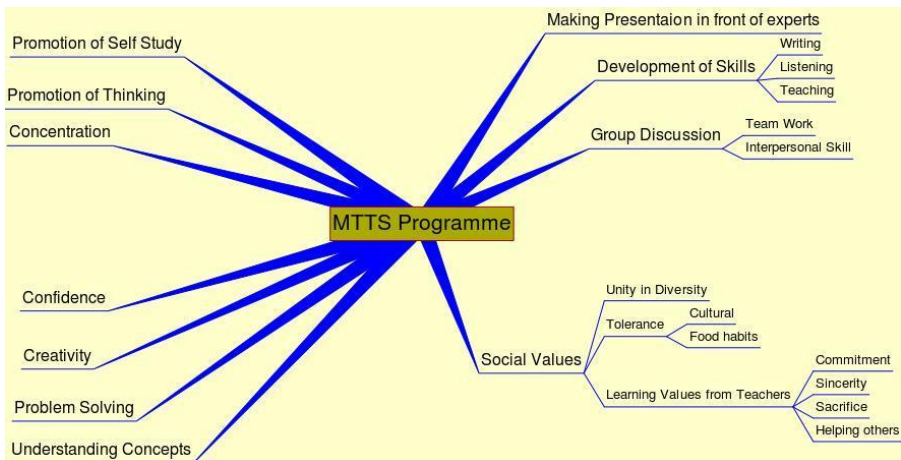
Photos:

Faculty and students of various MTTT camps.

Souvenir design:

Prapti Tala (OFCM2021; MTTT2022, IISER TVM; MTTT2023, IIT Madras)

Yerrapati Venkata Subbaiah (OFCM2021, InitMath Bihar 2022)



MTTS2023 Follow-up

MATHEMATICS TRAINING & TALENT SEARCH PROGRAMME(MTTS)

Skill Building in Higher Mathematics since 1993
 Organised by: MTTS Trust
 Funded by: National Board for Higher Mathematics