ANNUAL REPORT 2022-23
DEPARTMENT OF <u>MATHEMATICS</u>

1. Introduction:

The Department of Mathematics was established in 1959 along with the institute. It offers M.Sc. programme in Mathematics, M.Tech. programme in Industrial Mathematics and Scientific Computing (IMSC), and Ph.D. programme. In addition, the department has taken the responsibility of teaching mathematics courses to B.Tech., M.Tech. (other than IMSC), M.Sc. and Ph.D. students at the institute.

The major research areas of the department are the following:

1. Algebraic Combinatorics
2. Algebraic Geometry
3. Algebraic Topology
4. Applied Probability
5. Approximation Theory
6. Category Theory
7. Combinatorial Optimization
8. Combinatorics
9. Combinatorics of Words
10. Commutative Algebra
11. Complex Analysis
12. Conformal Geometry
13. Contact and Symplectic Topology
14. Convective Heat & Mass Transfer
15. Computational Fluid Dynamics
16. Computational Number Theory
17. Cryptology
18. Differential and Integral Equations
19. Differential Topology
20. Fixed Point Theory
21. Fluid Mechanics
22. Functional Analysis
23. Fractals
24. Game Theory
25. Graph Algorithms
26. Graph Theory
27. Harmonic Analysis
28. Inverse and Ill-Posed Problems
29. Linear Algebra
30. Low dimensional Topology
31. Mathematical Modeling
32. Mathematical Study of Ferromagnetic Networks
33. Nonlinear Analysis
34. Nonlinear Analysis of Functional Differential Equations
35. Nonlinear Differential Equations
36. Number Theory
37. Operator Algebras
38. Operator Equations
39. Operator Theory
40. Optimization
41. Partial Differential Equations
42. PDE Numerics
43. Solid Mechanics
44. Special Functions
45. Systems and Control Theory
46. Theory of Codes
47. Theory of Computation
48. Theory of Wavelets
49. Time Frequency Analysis
50. Wave Structure Interactions

2. Academic Programmes:

2.1 New discipline/branch introduced:

2.2 New Courses introduced:

Sl. No.	Course No.	Title
1.	MA5897	Fast Matrix Algorithms
2.	MA5018	Stochastic Calculus for Finance

2.3 New lab(s) established: NIL

2.4 Students on roll as of September 2022 +M.S. & Ph.D admission in Jan. 2023:

Programme	I year	II Year	III Year	IV Year	V Year & others	Total

B.Tech.	-	-	-	-	-	-
Dual Degree	-	-	-	-	-	-
M.A.	-	-	-	-	-	-
M.Sc.	**48**	**41**	-	-	-	**89**
M.Tech.	**22**	**24**	-	-	-	**46**
M.B.A.	-	-	-	-	-	-
M.S.	-	-	-	-	-	-
Ph.D.	**16**	**8**	**13**	**18**	**44**	**99**
Total						

2.5   Endowment prize instituted:

2.6   Names of Student/Scholar who attended Conference/ /Seminar and Symposia Abroad/India:

Sl. No.	Name of the Student/Scholar	Roll No.	Name of the Conference/ Seminar / Symposia / Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Elanchearan R S	MA20D751	Satellite conference cum workshop ICM 2022 "Representations and Characters: Revisiting the Works of Harish-Chandra and André Weil"	01.07.2022 - 19.07.2022 National University of Singapore	PMRF Contingency Grant
2.	Sivashankar B	MA19D018	Satellite conference cum workshop ICM 2022 "Representations and Characters: Revisiting the Works of Harish-Chandra and André Weil"	01.07.2022 - 19.07.2022 National University of Singapore	NBHM Contingency grant
3.	Shubhangi Sikaria	MA16D203	36th International Workshop on Statistical Modeling Manuscript titled: "Option Pricing using Hawkes Process"	18.07.2022 - 22.07.2022 University of Trieste, Italy	Institute Travel Grant
4.	V A Kandappan	MA16D300	24th Conference of the International Linear Algebra Society Talk Titled: *A Domain Decomposition based preconditioner for Discretised Integral equations in two dimensions*	20.06.2022 - 24.06.2022 Galway, Ireland	Institute Travel fund
5.	Deyyala Satyaprasad	MA17D200	Conference: 39th IAHR World Congress Talk Titled: "A Meshless Numerical Method for Solving 1D Shallow Water Equations"	19.06.2022 - 24.06.2022 Palacio de Congresos de Granada, Spain	Institute Travel Grant
6.	Mrityunjoy Ghosh	MA18D001	Conference: "Shape Optimization, related topics & applications" Talk on 14th June 2022: "*Monotonicity of the first Dirichlet eigenvalue of the p-Laplacian w.r. to dihedral symmetry* "	13.06.2022 - 17.06.2022 Roscoff, Biological Center, Bretagne, France	Institute Travel Grant Amount: 1,50,000
7.	Mohit Kumar	MA15D203	Geometry of Deterministic and Random Fractals Title of the presentation: Fractal Interpolation for Data Set with stable Noise	27.06.2022 - 01.07.2022 Budapest University of Technology and Economics, Hungary	Institute Travel Grant
8.	Vijay	MA15D205	Geometry of Deterministic and Random Fractals Title for the presentation- "Rational spline zipper alpha-fractal functions''	27.06.2022 - 01.07.2022 Budapest University of Technology and Economics, Hungary	Institute Travel Fund

9.	Divya Murali	MA17D012	To attend the 15th Viennese Conference on Optimal Control and Dynamic Games	12.07.2022 - 15.07.2022 Vienna University of Technology, Vienna, Austria	Institute Travel Fund
10.	Ms. Ayushi Singh Sengar	MA15D201	ICMSC 2022 conference Title of the paper: Convoluted Fractional Poison Process of order k	17.06.2022 - 18.06.2022 [Attended virtually] IMRF Dubai Academic Chapter, Omega, Dubai	Institute Travel Fund
11.	Sagar Sawant	MA18D015	Oral Presentation titled: "On distinguishing digraphs by its quasisymmetric B-polynomial" Colloquium on Combinatorics	18.11.2022 - 19.11.2022 Paderborn University, Germany	Institute Travel Fund
12.	Koushik Brahma	MA18D002	Conference on Toric Topology 2023 Paper Presentation titled: "Integral Cohomology rings of weighted Grassmann orbifolds"	Osaka Metropolitan University, Japan 21.02.2023 to 22.02.2023	Institute travel grant
13.	Sudeep Podder	MA17D019	Conference on Toric Topology 2023 Paper Presentation titled: "K – theory of real Grassmann manifolds"	Osaka Metropolitan University, Japan 21.02.2023 to 22.02.2023	Institute Travel Grant
India					
1.	Souvik Mandal	MA22D014	RMS2022 conference	SSN college of Engg, Chennai 6th-8th December 2022	Not Availed
2.	Jiya Rose Johnson	MA20D021	37th Annual Conference of Ramanujan Mathematical Society	SSN college of Engg, Chennai 6th-8th December 2022	self
3.	Subhajit Roy	MA19D009	37th Annual Conference of Ramanujan Mathematical Society	SSN college of Engg, Chennai 6th-8th December 2022	self
4.	Sagnik Biswas	MA20D013	37th Annual Conference of Ramanujan Mathematical Society	SSN college of Engg, Chennai 6th-8th December 2022	Self
5.	Deblina Dey	MA20D750	37th Annual Conference of Ramanujan Mathematical Society	SSN college of Engg, Chennai 6th-8th December 2022	Not Availed
6.	Vinay Sipani	MA19D005	37th Annual Conference of Ramanujan Mathematical Society Presented Paper Titled: On the classification of planar Rips complexes with weak pseudo manifold structure.	SSN college of Engg, Chennai 6th-8th December 2022	Did not avail
7.	Surajit Mandal	MA20D022	23rd International Conference on Cryptology in India (Indocrypt 2022)	TCG Crest, BOSE Institute, Kolkatta 11th-14th December 2022	self
8.	Rahul Balu Girme	MA18D020	23rd International Conference on Cryptology in India (Indocrypt 2022)	TCG Crest, BOSE Institute, Kolkatta 11th-14th December 2022	Institute Travel Fund
9.	Chandan Dey	MA18D009	23rd International Conference on Cryptology in India (Indocrypt 2022)	TCG Crest, BOSE Institute, Kolkatta 11th-14th December 2022	Institute Travel Fund
10.	Soumya Sahoo	MA20D201	23rd International Conference on Cryptology in India (Indocrypt 2022)	TCG Crest, BOSE Institute, Kolkatta 11th-14th December 2022	Not Availed
11.	Kamla Kant Mishra	MA16D037	37th Annual Conference of Ramanujan Mathematical Society Paper Presentation Titled: "Local and global existence of mild solutions for a class of non-autonomous evolution fractional integrodifferential equations"	SSN college of Engg, Chennai 6th-8th December 2022	Institute Travel Fund
12.	Sagar Sawant Sudhirkumar	MA18D015	37th Annual Conference of Ramanujan Mathematical Society Paper Presented titled: "On distinguishing digraphs by its quasisymmetric B-polynomial"	SSN college of Engg, Chennai 6th-8th December 2022	Institute Travel Fund

Sl.No.	Name	Roll No.	Conference/Presentation	Venue/Date	Fund
13.	Koushik Brahma	MA18D002	37th Annual Conference of Ramanujan Mathematical Society Paper Presented titled: "Integral Generalized Equivariant Cohomologies of Weighted Grassmann Orbifolds"	SSN college of Engg, Chennai 6th-8th December 2022	Institute Travel Fund
14.	Bidhan Paul	MA19D003	37th Annual Conference of Ramanujan Mathematical Society Paper Presentation Titled: "K – Theory of flag Bott Manifolds"	SSN college of Engg, Chennai 6th-8th December 2022	Institute Travel Fund
15.	Deyyala Satyaprasad	MA17D200	23rd IAHR-APD Conference	Dept. of Ocean Engineering, IIT Madras $14^{th} - 17^{th}$ December 2022	Institute Travel Fund
16.	Ganapathy K	MA19D203	Conference on Commutative Algebra and Algebraic Geometry (CoCAAG 2023)	Department of Mathematics, IIT Hyderabad 08.02.2023 to 11.02.2023	Conference Fund
17.	K Mohamed Harith	MA20D012	Conference on Commutative Algebra and Algebraic Geometry (CoCAAG 2023)	Department of Mathematics, IIT Hyderabad 08.02.2023 to 11.02.2023	Conference Fund (Organizer)
			Poster Presentation: "Algebraic Algorithms for generalised vertex colorings of a graph" International School Computational Commutative Algebra (CoCoA - 2023)	Hue University, Hue, Vietnam 19.03.2023 to 25.03.2023	Travel funded by the organizers
18.	Balaji Rohidas Kadam	MA19D205	International Symposium on Applied Optimization and Game Theoretic Models for Decision-Making (ISOGTDM 2023)	Indian Statistical Institute, Delhi 01.02.2023 to 03.02.2023	Self
19.	Krupa Maria Jose	MA22D005	International Symposium on Applied Optimization and Game Theoretic Models for Decision Making (ISOGTDM 2023)	Indian Statistical Institute, Delhi 01.02.2023 to 03.02.2023	PMRF Contingency Fund
20.	Pratiksha Shingavekar	MA17D004	Oral Presentation: "3-Selmer groups, ideal class groups and the cube sum problem" at Chennai-Tirupati Intercity Number Theory Conference	CMI Chennai 11.02.2023 to 12.02.2023	Not Applicable
			Special Values of L-functions	University of Paderborn, Germany 13.03.2023 to 17.03.2023	Provided by the conference
21.	Kamla Kant Mishra	MA16D037	Oral Presentation: "Controllability for a Class of Nonlinear Fractional Control System" in the International Conference on Fractional Differentiation and Its Applications (ICFDA 2023)	Ajman University, Ajman, UAE 14.03.2023 to 16.03.2023	Institute Travel Fund

2.7   Names of students/scholars who won outside prizes and awards:

Sl.No.	Name of the Student/Scholar	Roll No.	Name of Prize	Prize awarded by

2.8   Name of Students/Scholars who won Institute Convocation/Institute Day Prize:

Sl.No.	Name of the Student/Scholar	Roll No.	Name of Prizes	Name of Donor

1.	SUBHANKAR NANDI	MA14D204	Institute Research Award for the year 2022-23	IITM
2.	SHUBHAM MALLIK THAKUR	MA20M022	PROF HELMUT NEUNZERT ENDOWMENT PRIZE	IITM
3.	GOREGAOKAR NEHA SHAILESH	MA20C026	MIRA PAUL MEMORIAL PRIZE	IITM
4.	DEBABRATA DE	MA15D001	SMT LAKSHMIKUTTY AMMA AND SHRI A KRISHNANKUTTY NAIR PRIZE [**JOINT WINNERS**]	IITM
	VIJAYAKUMAR R	MA16D031		IITM

3. Faculty and their activities:

3.1. Faculty:

Name and Qualifications	Major Areas of Specialisation
Professors	
Prof. V. Vetrivel, Ph.D. (IIT Madras)	Non-smooth optimization, Non-linear Analysis, fixed point theory, complementarity problems
Prof. A.K.B. Chand, Ph.D. (IIT Kanpur)	Fractals, approximation theory and wavelets
Prof. Arindama Singh, Ph.D. (IIT Kanpur)	Logic, numerical analysis
Prof. S. Ponnusamy, Ph.D. (IIT Kanpur)	Complex analysis, function spaces, special functions and conformal geometry
Prof. R. Radha, Ph.D. (IMSc Chennai)	Harmonic analysis, wavelets, time-frequency analysis
Prof. R. Rama, Ph.D. (Anna University)	Formal language and automata theory/molecular computing
Prof. Y.V.S.S. Sanyasiraju, Ph.D. (IIT Madras)	Computational fluid dynamics
Prof. Satyajit Roy, Ph.D. (IISc Bangalore)	Convective heat and mass transfer, computational fluid dynamics
Prof. K.C. Sivakumar, Ph.D. (IIT Madras)	Functional analysis, mathematical programming
Prof. Ch. Srinivasa Rao, Ph.D. (IISc Bangalore)	Non-linear differential equations
Prof. S.R. Manam, Ph.D. (IISc Bangalore)	Applied mathematics
Prof. S. Sundar, Ph.D. (IIT Madras)	Computational fluid dynamics, numerical analysis for partial differential equations, mathematical modeling
Dr A.V. Jayanthan, Ph.D. (IIT Bombay)	Commutative algebra and algebraic combinatorics
Dr A.J. Shaiju, Ph.D. (IISc, Bangalore)	Game theory, systems and control theory
Dr Kalpana Mahalingam, Ph.D. (University of South Florida, Tampa)	Theory of codes, DNA computing, combinatorics of words
Dr Shruti Dubey, Ph.D. (IIT Kanpur)	Nonlinear analysis of functional differential equations, mathematical study of ferromagnetic systems, Differential Equations and Neural networks
Dr Kunal Krishna Mukherjee, Ph.D. (Texas, A&M)	Operator algebras
Dr R. Balaji, Ph.D. (IIT Madras)	Linear algebra and optimization

Dr Santanu Sarkar, Ph.D. (ISI, Kolkata)	Cryptology and computational number theory
Associate Professors	
Dr Neelesh S Upadhye, Ph.D. (IIT Bombay)	Probability theory and applications
Dr Sounaka Mishra, Ph.D. (ISI, Kolkata)	Discrete mathematics, approximation algorithm, combinatorial optimization
Dr V. Uma, Ph.D. (IMSc Chennai)	Topology and geometry of toric varieties and related spaces
Dr Arijit Dey, Ph.D. (IMSc Chennai)	Algebraic geometry
Dr N. Narayanan, Ph.D. (IMSc, Chennai)	Graph Theory: graph colouring, structural and extremal graph theory probabilistic combinatorics, discrete mathematics
Dr Priyanka Shukla, Ph.D. (JNCASR, Bangalore)	Fluid Mechanics: hydrodynamic instability; nonlinear dynamics; numerical PDE; granular flows; pattern formation
Dr T.V. Anoop, Ph.D. (IMSc Chennai)	Linear and nonlinear partial differential equations, nonlinear functional analysis
Dr Soumen Sarkar, Ph.D. (ISI, Kolkata)	Algebraic topology, geometric topology, differential geometry, convex geometry, K-theory, topological complexity, persistent homology, ring of continuous functions
Assistant Professors	
Dr P. Aprameyan, Ph.D. (Philipps University, Marburg, Germany)	Analysis on symmetric spaces, representations of real Lie groups, geometric quantization
Dr Dipramit Majumdar, Ph.D. (Brandeis University)	Algebraic number theory, p-adic aspects of modular forms and Galois representations
Dr Ramesh Kasilingam, Ph.D. (IIT Bombay)	Differential and algebraic topology and their interactions with differential geometry
Dr Sarang S. Sane, Ph.D. (TIFR, Bombay)	Commutative algebra, homological algebra, algebraic k-theory, algebraic geometry
Dr Sivaraman Ambikasaran, Ph.D. (Stanford University)	Numerical linear algebra, fast algorithms, and scientific computing
Dr Sriram Balasubramanian, Ph.D. (University of Florida)	Functional analysis
Dr Suhas Jaykumar Pandit, Ph.D. (ISI, Bangalore)	Geometric group theory and low-dimensional topology
Dr Sumesh K., Ph.D (ISI, Bangalore)	Operator algebras, Operator Theory, and Mathematical aspects of Quantum Information theory
Dr T.E. Venkata Balaji, Ph.D. (CMI, Chennai)	Algebraic geometry and commutative algebra
Dr. Barun Sarkar ., Ph.D (University of Wuppertal, Germany)	Stochastic PDEs & Probability Theory
Dr. Surjit Kumar., Ph.D (IIT Kanpur)	Operator Theory
Dr. G. Arunkumar., Ph.D (IMSc, Chennai)	Infinite – Dimensional Lie Algebras, Algebraic Combinatorics & Spectral Graph Theory
Dr. A. Sathish Kumar., Ph.D (IIT Roorkee)	Approximation Theory, Sampling Operators
Dr. Anuj Jakhar., Ph.D (IISER Mohali)	Algebra And Number Theory
Visiting Faculty	
Dr. Saurav Samantaray, Ph.D. (IISER Thiruvananthapuram)	Numerical Analysis and Scientific Computation

Emeritus Faculty	
Prof. R. Usha, Ph.D. (IIT Madras)	Fluid dynamics

3.2. Short-term Courses/ Workshops/ Seminars/ Symposia /Conferences organized by the faculty members:

Sl. No.	Coordinator(s)	Title	Period
Conference:			
1.	Chairs: Prof. V. Vetrivel Prof. S. Sundar Organizing Secretary: Prof. K. C. Sivakumar Convener: Prof. S. R. Manam	International Conference on Recent Strategies in Mathematics and Statistics (ICRSMS 2022) organized by Dept. of Mathematics, Stella Maris College in collaboration with Dept. of Mathematics, IIT Madras	19 – 21st May, 2022
2.	Prof. R. Radha (Coordinator- ICAIPA-2022)	International Conference on Analysis, Inverse Problems and Applications (ICAIPA-2022) Sponsored by Office of Global Engagement, IIT Madras & International Mathematical Union	18 – 21st July, 2022
3.	Dr. Arijit Dey	Vector Bundles In Chennai	6 – 11th February, 2023
Seminar:			
4.	Dr. Soumen Sarkar Dr. Ramesh Kasilingam	Lakshmi Raman Memorial Lectures Topology Day 2022	5th December 2022
Symposia:			
5.	Dr. T. V. Anoop, Dr. P. Aprameyan and Dr. N. Narayanan Inaugural address by Prof. V. Kamakoti, Director	Mathematics In-house Symposium Sponsored by Office of International & Alumni Relations IIT Madras	29th – 30th July, 2022
6.	Dr. Ramesh Kasilingam & Dr. P. Aprameyan	National Symposium on Mathematics and Applications [NSMA 2022]	22nd December, 2022
Workshop:			
7.	Dr. V. Vetrivel	Industry Meets Math	18th January 2023
8.	Dr. Barun Sarkar	POPULAR MATHEMATICS WORKSHOP Sponsored by Global Engagement, IITM & partially funded by NBHM	13th – 15th February, 2023
Short term Course:			
9.	Dr. Neelesh S Upadhye	Data Visualization with R (online)	21, 28 and 29th January 2023

3.3. Short-term Courses/ Workshops/ Seminars/ Symposia/ Conferences/ Training attended by the faculty members in Academic institutions and Public Sector Undertakings:

Sl. No.	Name of faculty	Title	Institution	Period
Workshop:				
1.	Dr. Satyajit Roy	Invited talk: "Non-uniform mass transfer and Non-uniform heating in Fluid flow problems" in 3rd International Workshop on Numerical and Analytical Techniques in Engineering Problems	SRMIST, Chennai	31st January 2023
2.	Dr. Shruti Dubey	Workshop on Emerging Areas in Differential Equations and Real-World Applications	Dhirubhai Ambani Institute of Information and Communication Technology (DAIICT), Gandhinagar,Gujarat	30th May 2022 – 3rd June 2022
3.	Dr. Barun Sarkar	Workshop on Lectures on Probability Series - XV	IISc Bangalore	2nd – 6th December 2022
Seminar:				

4.	Dr. V. Uma	International online seminar: International Polyhedral Products Seminar "K-theory of Springer Varieties"	Princeton University	17th November 2022
Symposia:				
5.	Dr. Shruti Dubey	National Mathematics Day	Ramanujan Institute for Advanced Study in Mathematics, University of Madras	22nd December 2022
		National symposium on "Modern Mathematical Methods in Science Engineering"	NIT Warangal	11th May 2022
Conference:				
6.	Dr. Arijit Dey	Conference on Algebraic Geometry	SRM University	19th – 23rd July 2022
7.	Dr. Barun Sarkar	International Conference on Dynamical Systems, Control and their Applications	IIT Roorkee	1st – 3rd July 2022
8.	Dr. S. Ponnusamy	"High-dimensional Approximation and Discretization"	Sirius Mathematical Centre, Sochi, Russia	27th June – 1st July 2022
		International congress of Mathematicians 2022 : "Complex Analysis and Related Topics"	Kazan Federal University, Kazan, Russia	30th June – 4th July 2022
		Plenary speaker (Offline) at the 9th International Conference on Mathematics and Computing (ICMC 2023) "On Bohr's phenomenon"	Birla Institute of Technology Goa Campus, Goa	6th - 8th January 2023
		Plenary speaker (0nline) at the International Conference on Algebra, Analysis and Applications "On Landau-Bloch Theorems for Analytic Mappings"	Manipal Institute of Technology MIT, Manipal Campus	6th - 8th January 2023
9.	Dr. Shruti Dubey	International Conference on Dynamical Systems, Control and their Applications	IIT Roorkee	1st – 3rd July 2022
10.	Dr. V. Uma	RMS conference "K-theory of Springer varieties"	SSN college Chennai	6th – 8th December 2022
		Annual Conference of Indian Women in Mathematics "K-theory of flag Bott manifolds"	IISER Pune	27th – 29th December 2022
11.	Dr. Y. V. S. S. Sanyasiraju	Third International conference on Recent Trends in Applied and Computational Mathematics (ICRTACM 2022)	Department of Mathematics, School of Applied Sciences Reva University, Bangalore	10th October 2022
12.	Dr. A. K. B. Chand	Talk titled: "Fractal Interpolation Functions for Noisy Data Sets" In the International Conference on Mathematical Analysis and Applications	Institute of Mathematics and Applications Bhubaneswar	21st - 22nd January 2023
		Talk titled: "Shape Preserving Aspects of Graph Directed Fractal Functions" In the International Conference on Recent Trends in Applied Mathematics	ICRTAM - 2023, Loyola College, Chennai	23rd - 24th February 2023
13.	Dr. A. Sathish Kumar	Talk titled: " Approximation of Functions by Kantorovich Exponential Sampling Series" in 2nd International Conference on Mathematical Analysis and Computing (ICMAC) 2022	SSN College of Engineering, Chennai	22nd – 23rd December 2022

14.	Dr. Dipramit Majumdar	Talk titled: "Integers expressible as sum of rational cubes"	SSN College of engineering	8th December 2022
15.	Dr. Ramesh Kasilingam	Talk titled: "Euler Characteristic and Data Analysis" at the 4th International Conference on Mathematical Techniques and Applications	SRM Institute of Science and Technology, Kattankulathur	22nd – 24th March 2023
		Talk titled: "Smooth structures on PL-manifolds of dimensions between 8 and 10"at the Frontier Symposium in Mathematics 2023	School of Mathematics, IISER Thiruvananthapuram Kerala	17th – 19th February 2023
Training:				
Short term Course:				
16.	Dr. Sumesh K	Quantum Dynamical Semigroup (Online)	ISI Bangalore	July - Nov 2022

3.4. Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of Lecture	Institution	Date
1.	Dr. S. Ponnusamy	Recent developments around Bohr's Inequality	Stella Maris College/IIT Madras	19.05.2022
		Invited Talk: "Recent developments and problems on Bohr type Inequality for the plane case"	Sirius University, Sochi Russia	28.06.2022
		Plenary talk : "Length of Ray Images under conformal mappings	Kazan Federal University, Kazan, Russia	30.06.2022
		"Landau-Bloch Theorems for Harmonic Mappings" at the "Congressio-Mathematica: The VIII International Conference of Mathematics and Computer Science''	Plenary talk (Online) Olsztyn, Poland,	19.09.2022 to 25.09.2022
		Advanced Training in Mathematical Analysis, "Series of Lectures in Complex analysis. "	Bharathidasan University, Trichy	31.10.2022 to 04.11.2022
		Expert Lecture, at RPS Group of Institutions, 8th Milestone Balana, "Analytic Functions & Power Series Representation"	Mahendergarh, Haryana	05.11.2022
2.	Dr. Jayant Jha	Introduction to the state-of-the-art advances in Bayesian computation and inference with application to neuroscience	Stella Maris College/IIT Madras	19.05.2022
3.	Dr. Neelesh S Upadhye	Time-Changed Poisson Process of order k	Stella Maris College/IIT Madras	19.05.2022
4.	Dr. Narayanan N	Cycle Double Cover Conjecture	Stella Maris College/IIT Madras	20.05.2022
5.	Dr. Shaiju A J	Evolutionary and Dynamic Stability of Population States	Stella Maris College/IIT Madras	20.05.2022
6.	Prof. K.C. Sivakumar	Game Theory	Stella Maris College/IIT Madras	20.05.2022
7.	Dr. Arijit Dey	An introduction to Birational geometry of algebraic varieties	Stella Maris College/IIT Madras	20.05.2022
8.	Dr. Venkata Balaji T E	Studying and Classifying Quadratic Forms	Stella Maris College/IIT Madras	20.05.2022
		Dynamic Geometric Proofs using Geogebra at Mathematics Club Meeting	Sri Sankara Sr. Sec School, Adyar	18.07.2022
		Geogebra as a tool to visualise Geometric Proofs	IIT Madras STEM Summer Programme for rural 10th std students	22.06.2022
		What is Complex Analysis and Why it should be learned?	Curry Leaf Days (Online) Workshop, Sponsored by MTTS	29.10.2022
		8 invited Lectures and 3 tutorial sessions on Conformal Mappings, Schwarz-Christoffel Transformations, Riemann Mapping Theorem and Applications	TEW NCM Workshop on Complex Analysis and Geometry at MNIT Jaipur	15.12.2022 to 17.12.2022
9.	Dr. Soumen Sarkar	Invariant meridians and parallels for polynomial vector fields on product of spheres	Stella Maris College/IIT Madras	20.05.2022
10.	Dr. Ramesh Kasilingam	Topology through Four Centuries : Manifolds	Stella Maris College/IIT Madras	20.05.2022

11.	Dr. Uma V	Algebra	Stella Maris College/IIT Madras	21.05.2022
12.	Dr. Shruti Dubey	Fractional order initial value problems with state dependent delay	NIT Warangal	11.05.2022
		Fractional Derivatives and their importance in present scenario	Dhirubhai Ambani Institute of Information and Communication Technology (DAIICT), Gandhinagar,Gujarat	30.05.2022 to 03.06.2022
		Existence of solution for abstract fractional semilinear differential equation with delay	Department of Mathematics, Indian Institute of Technology Roorkee (IIT-Roorkee)	01.07.2022 to 03.07.2022
		Study of abstract Cauchy problem with state dependent delay	Ramanujan Institute for Advanced Study in Mathematics, University of Madras	22.12.2022
13.	Dr. Barun Sarkar	"Existence and Uniqueness of solutions for Stochastic PDEs in the space of tempered distributions"	IIT Roorkee	01.07.2022 to 03.07.2022
		Weak solutions of Stochastic PDEs in the space of tempered distributions	MiHS 2022, IC & SR, IIT Madras	30.07.2022
14.	Dr. Surjit Kumar	A review of spherical tuple of operators	MiHS 2022, IC & SR, IIT Madras	30.07.2022
		An invited lecture : On Basic Calculus	VIT VELLORE	18-11-2022
		Conference on "Operator theory and Complex Geometry" Invited talk titled "Commuting tuple of multiplication operators homogeneous under the unitary group.	IISER Kolkata	24.11.2022 to 26.11. 2022
		"Commuting tuple of multiplication opertors homogeneous under K- group"	Ramanujan Mathematical Society (RMS) 2022	06.12.2022 to 08.12.2022
15.	Dr. Sanyasiraju Y V S S	Numerical computations using radial basis functions	MiHS 2022, IC & SR, IIT Madras	30.07.2022
		Invited talk: "Some simple computational techniques for solving Stefan problems" 3rd International conference on Recent Trends in Applied and Computational Mathematics (ICRTACM 2022)	Reva University, Bangalore	10.10.2022
16.	Dr. Dipramit Majumdar	Ribet's conjecture for the Eisenstein maximal ideals	MiHS 2022, IC & SR, IIT Madras	29.07.2022
17.	Dr. R. Balaji	Resistance matrices of balanced digraphs	MiHS 2022, IC & SR, IIT Madras	30.07.2022
18.	Dr. Priyanka Shukla	"Numerical aspects of the stability of flows through multi-layer porous channels" A Three-Day Online Faculty Development Programme on Recent Trends in Computational Fluid Dynamics	VIT, Chennai	28-09-2022
19.	Dr. G. Arunkumar	Recent developments on Stanley's Tree conjecture	MiHS 2022, IC & SR, IIT Madras	29.07.2022
		Talk Titled: Euclid's Game Vigyan Pratibha workshop for Tamil Medium School Teachers	IMSc., Chennai	11-08-2022
		"Latex software and the related topics" Vigyan Pratibha workshop for English Medium School Teachers,	IMSc., Chennai	17-08-2022
		"Latex software and the related topics" Workshop on Latex for Technical Writing	Shri Krishnaswamy College for Women, Chennai.	20-09-2022
20.	Dr. Sounaka Mishra	Approximation algorithm for node deletion problems on bipartite graphs	Invited Talk: Colloquium IIT Delhi	15-09-2022
21.	Dr. Santanu Sarkar	RSA Cryptosystem	Invited Talk, NIT Trichy	29-08-2022

22.	Dr. K. Sumesh	An introduction to separability and enytanglement breaking maps	Centre for Data Science, ITER, Siksha 'O' Anusandhan Buhaneswar	17-09-2022
23.	Dr. Ramesh Kasilingam	Metric spaces at the Second CMI-NASI Winter Training Programme in Mathematics	Ramanujan Institute for advanced study in Mathematics, University of Madras	07.12.2022 to 17.12.2022
24.	Dr. Arindama Singh	"Defining Trigonometric Functions"	BITS Goa	21.02.2023
25.	Dr. A. K. B. Chand	Member of faculty recruitment interview (technical) for Mathematics/Statistics	VIT-AP University	18.02.2023
26.	Dr. V. Vetrivel	Talk Titled: " Constrained and Unconstrained Optimization Techniques" in Workshop on "Mathematics for Machine Learning"	Gayathri Vidhya Parishad, Vishakapatnam	14.03.2023 to 17.03.2023

3.5. Visits abroad by faculty:

Sl. No.	Name of faculty	Country Visited	Date	Purpose of visit	Funding from
1.	Dr. V. Vetrivel	Switzerland	23.05.2022 to 27.05.2022	Seminar for Applied Maths at ET, Zurich	GE/CPDA
2.	Dr. K. C. Sivakumar	Spain	30.05.2022 to 30.06.2022	To Attend ASEM-DUO exchange program, Dept. of Mathematics, Universitat Politechnia de Catalunya, Barcelona, Spain	CPDA
		Portugal	15.06.2022 to 17.06.2022	To Attend International Conference on Matrix Analysis and Applications (ICMAA 2022) University of Aveiro, Portugal	CPDA
		USA	01.01.2023 to 30.06.2023	Research interactions with Prof. Maribel Bueno Cachadina in Department of Mathematics, (Visiting Professor) at University of California, Santa Barbara (UCSB).	Funded by UCSB
3.	Dr. Santanu Sarkar	Germany	25.05.2022 to 20.06.2022	To attend Meeting in Ruhr University, Bochum, Germany	CPDA
		Norway		To present paper at EUROCRYPT 2022, Trondheim, Norway	CPDA
4.	Dr. Soumen Sarkar	Republic of Korea	06.07.2022 to 10.07.2022	Research Collaboration at Korea Advanced Institute of Science & Technology (KAIST), Seoul Daejeon, Republic of Korea	NA
		Republic of Korea	11.07.2022 to 13.07.2022	Invited Talk in "Workshop on toric topology" at KAIST, Seoul Daejeon, Republic of Korea	CPDA
5.	Dr. S. Ponnusamy	Russia	15.06.2022 to 16.08.2022	Research Collaboration at Petrozavodsk State University, Russia as the Director of the "Center for Functions Theory Problem"	Travel by CPDA and local expenses by Petrozavodsk State University
6.	Dr. Priyanka Shukla	Singapore	06.12.2022 to 31.12.2022	Research Discussion at National University Singapore	Travel by CPDA
7.	Dr. V. Uma	JAPAN	21.02.2023 to 24.02.2023	Participated in the international conference Toric Topology 2023 and delivered an invited talk on "Equivariant K-theory of Springer varieties "" at Osaka Metropolitan University, Osaka, Japan.	CPDA

3.6 Honours and Awards obtained by faculty:

Sl. No.	Name of faculty	Name of Award	Awarded by	Awarded for	Date of award
i. Honours:					
1.	Prof. S. Sundar	Chair Professor	Institute	Research Contribution	01.04.2022
2.	Prof. R. Rama	Girija Vaidyanathan Chair Professor	Institute	Research Contribution	28.06.2022
3.	Prof. S. Ponnusamy	Leader of Geometric Function Theory Group at High Dimensional Approximation and Application Laboratory	Moscow Centre of Fundamental and Applied Mathematics.	Research Contribution	26.08.2022
ii. Awards:					
4.	Prof. Y. V. S. S. Sanyasiraju	*BEST TEACHER AWARD 2022*	Institute	*Excellence in teaching*	31.08.2022

3.7.   Fellowships of Academies and Professional Societies:

Sl. No.	Name of faculty	Year of admission
Humboldt Fellowship:		
INAE:		
INSA:		
FRA:		
ISTE/CSI:		
Others:		
1.	**Dr. Anuj Jakhar - Member, INYAS**	**2023**

3.8   Journal Editorial Boards:

Sl. No.	Name of faculty	Position (Editor/Member)	Journal Name
1.	**V. Vetrivel**	Editorial Member	The Journal of Indian Mathematical Society

4.   Design and Development Activities:

4.1.   Brief and specific details of Process/Instruments/Equipment/ Software designed and developed:

4.2.   New facilities added or major equipment procured:

Sl. No.	Name of Equipment	**Value** (Rs. in lakhs)

4.3.   Patents:

4.3.1   Patents filed:

Sl. No.	Name of faculty	Topic of patent

4.3.2   Patents awarded:

Sl. No.	Name of faculty	Topic of patent

5.   Research and Consultancy:

5.1   Sponsored Research Projects: (on going & new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Development of Efficient Swarm Intelligence Based Optimization Algorithm using Fractional Calculus for Diagnosis of Muscle Disorders	12-10-2022 to 11-10-2025	TARE, DST SERB	10.05	Dr. V. Vetrivel (PI)
2.	An initiative to create changing computational environment in free surface turbulent flows: Mesh-free RBF (Radial basis function) based local schemes IITM	One Year	RF/22-23/0543/MA/RFER/005020		Dr. Y. V. S. S. Sanyasiraju (PI) Prof. R. Usha (Co-PI)
3.	A study on Weyl-Kac Character formula of Borcherds-Kac-Moody Lie (super) algebras	Two Years File Number: SRG/2022/001281	DST-SERB (Startup Research Grant)	14	Dr. G. Arunkumar
4.	Research Project titled "Existence and Uniqueness of Fourth order SPDEs in the space of Tempered Distributions"	2 Years	DST-SERB DST-SRG grant 2022	15.06	Dr. Barun Sarkar
5.	Weakly spherical tuples and G-balanced Hilbert Spaces	Nov. 02, 2016 to Nov. 02, 2022	DST Inspire Faculty Project	6.96	Dr. Surjit Kumar
6.	Subnormality and complete contractivity of K-homogenous tuples of operators	05.01.2023 to 04.01.2026 (3 Years)	DST-SERB MATRICS Grant	6.6	Dr. Surjit Kumar
7.	Direct and Inverse Voronovskaya Results for the Sampling Operators	2 Years	SP/22-23/1304/MA/SERB/009017	4.4	Dr. A. Sathish Kumar
8.	A study of polynomials over valued fields	One Year	SERB SP/22-23/1213/MA/SERB/009034	6.8	Dr. Anuj Jakhar
9.	K-Theory of Hessenberg Varieites	3 Years	MATRICS Project from DST-SERB	6	Dr. V. Uma
10.	Frames & Shift invariant systems on Non-abelian locally compact groups	3 Year Since 29.03.2023	NBHM	3.98	Dr. R. Radha (PI) Dr. K. Sumesh (Co-PI)
11.	Mathematical Study of Anomalous Diffusion Processes via Partial Differential Equations	2020-2023	Science and Engineering Research Board (SERB)	6.6	Dr. Shruti Dubey

5.2   Industrial Consultancy projects: (on going & new)

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)

5.3   RBIC projects: (on going & new)

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)

5.4   Retainer Consultancy: (on going & new)

Sl.No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr. Neelesh S Upadhye	Technical Guidance for foundary software	MPM Infosoft Ltd	8.76
2.	Dr. Neelesh S Upadhye	Algorithms for Market Analysis	Futures First Ltd	6
3.	Dr. Neelesh S Upadhye	Shape-based Search Algorithms	Sconce (P) Ltd	14.16

5.5   Exchange programme with other Universities including Institutions/Universities under MOU;

5.6   Faculty members participation with other institution under MoU:

Sl. No.	Name of faculty	Participation details	Name of University/Institution which has MoU

Research Publications of the faculty members & research scholars:

Note: _Details of Scopus and WoS publications to be provided by office of Dean (AR)_

6   Distinguished Visitors to the Department:

Sl.No.	Name of the visitor and Designation	Date of visit	Purpose of visit
1	Prof. Ozhan Genc Jagiellonian University, Faculty of Mathematics and Computer Science, Poland	02.04.2022 to 30.04.2022	Collaboration work on the topic "Study of vector bundles and it's moduli spaces over algebraic varieties" under the IoE project "Algebraic Geometry"
2	Dr. Padmanabhan Seshaiyer Professor of Mathematical Sciences, George Mason University, USA	13.04.2022	Gave Talk "Mathematical Modeling, analysis and simulation of multi-physics applications in biological, bio-inspired and engineering systems"
3	Prof. Somesh Kumar Dept. of Mathematics, IIT Kharagpur	25.04.2022	"Bootstrap Tests for One Way ANOVA under Heteroscedasticity and Unbalanced Data
4	Prof. Gadadhar Misra, J C Bose National Fellow at the Statistics and Mathematics Unit, ISI Bangalore & Visiting professor, Mathematics at IIT Gandhinagar	20.05.2022	Spherical Operators
5	Prof. Sunil K. Chebolu Professor and Undergraduate Director Department of Mathematics Illinois State University, USA	16.06.2022	Gave Talk "An overview of Fuchs' problem"
6	Prof. Hema Srinivasan Department of Mathematics University of Missouri, Columbia	20.06.2022	Gave Talk "How To Glue Two Semigroups In N^n and The Consequences Of Such Gluing"
7	Dr. Suprio Bhar Department of Mathematics and Statistics, IIT Kanpur, UP	22.06.2022 to 29.06.2022	Research Collaboration with Dr. Barun Sarkar
8	Andres Encinas Bachiller Professor, Department of Mathematics, Polytechnic University of Catalunya, Barcelona, Spain.	14.07.2022	Gave Talk "Potential Theory on Finite Networks"
		01.07.2022 to 30.07.2022	Professor KC Sivakumar was his host and his trip was sponsored by the ASEM-DUO exchange programme.
9	Mr. Vikram Venkatasubramanian, Alumnus (1996 M.Sc. Batch) Vikram Venkatasubramanian Founder and CEO, Nandi Security, Inc ph: 978 495 1093 https://www.nandisecurity.com	16.08.2022	An Interaction Session with Students

10	Dr Ayalvadi Ganesh, Associate Professor in Complexity Sciences School of Mathematics, Universityof Bristol, UK	07.09.2022	Gave Talk "Gossiping in random graphs"
11	Prof. Abhijit Champanerkar Department of Mathematics College of Staten Island and The Graduate Center The City University of New York, USA.	15.09.2022	Gave Talk "Graphs, growth and geometry"
12	Dr. Jayanth Guhan Department of Mathematics Emory University, Atlanta, Georgia, USA	22.09.2022	Gave Talk "Local-global Principle for Hermitian spaces over semi-global fields"
13	Prof. Jean-Marc Laheurte, Electronics, communication systems and microsystems Vice President International, Gustave Eiffel University	19-09-2022	FOR RESEARCH COLLOBORATION
14	Dr. Asrifa Sultana Assistant Professor, IIT Bhilai	01.11.2022	Gave Talk "Certain Quasi-variational Inequalities and Nash games"
15	Prof. Dr. Habil Árpád BariczBabeş-Bolyai University, Department of Economics, Cluj-Napoca, Romania and Óbuda University, Institute of Applied Mathematics, Budapest, Hungary	18.10.2022	Gave Talk "Introduction to Riemann-Hilbert problems for classical orthogonal polynomials"
		19.10.2022	Gave Talk "Applications of Riemann-Hilbert problems for orthogonal polynomials"
		20.10.2022	Gave Talk "Analysis of the Kaiser-Bessel distribution"
16	Dr. V. G. Narasimha Kumar Associate Professor Dept. of Mathematics, IIT Hyderabad	09.12.2022	Gave Talk "On The Structure Of Drinfeld Modular Forms of Level $I_0 0(t)$ and Applications"
17	Dr. Vladimir Bobkov Department of Computational Mathematics Institute of Mathematics UFRC RAS Ufa, Russia.	15.12.2022	Gave Talk "Improved Friedrichs inequality for a subhomogeneous embedding"
18	Prof. Johannes Tausch Professor, Dedman College of Humanities & Sciences, Southern Methodist University, Dallas Texas	09.01.2023	Gave Talk "Fast Galerkin Methods for Parabolic Boundary Integral Equations"
19	Dr. Reza Naserasr Institut de Recherche en Informatique FondamentaleUniversité Paris Cité, Paris, France	09.02.2023	Gave Talk "Winding number and circular 4-coloring of (signed) graphs"
20	Prasanna Ravi Research Associate PACE labs (Physical Analysis and Cryptographic Engineering), Nanyang Technical University Singapore	09.02.2023	Gave Talk "Practical Side-Channel Analysis and Fault-Injection Analysis of Post-Quantum Lattice-based Cryptography"
21	Dr. Anna Gujgiczer Budapest University of Technology and Economics, Hungary	16.02.2023	Gave Talk "The History of Hedetniemi's Conjecture"
22	Prof. Rajesh Mahadevan Universidad de Concepcion CHILE	14.02.2023	Gave Talk "Rearrangement techniques, Riesz's inequality and some recent applications"
23	Dr. S. Sivananthan Associate Professor, Department of Mathematics Indian Institute of Technology Delhi	22.02.2023	Gave Talk "Completeness of discrete translates of a function"
24	Prof. Ananthnarayan Hariharan Department of Mathematics, IIT Bombay	28.02.2023	Gave Talk "The Multiplicity Conjecture and its Resolution"
25	Dr. Suprio Bhar Department of Mathematics and Statistics, IIT Kanpur, UP	25.01.2023 to 30.01.2023	Research Collaboration with Dr. Barun Sarkar

26	Prof. Reza Naserasr from IRIF, Paris, France and Dr. Anna Gujgiczer from Hungary (Visit was partially supported by Office of Global Engagement with a grant of 40K towards accommodation)	30.01.2023 to 04.03.2023	Research Collaboration With Dr. Narayanan N Supported by Indo-French Project
27	Prof Somasundaram K, Amrita Viswavidyapeetham, Coimbatore. Prof Geetha J. Amrita Viswavidyapeetham, Coimbatore.	13.02.2023 to 15.02.2023	Research discussions with Dr. Narayanan N and Prof Reza. Gave a talk at workshop "Popular Mathematics"
28	Prof Sagnik Sen, IIT Dharward	13.02.2023 to 15.02.2023	Research discussions with Dr. Narayanan N
29	Prof. Apoorva Khare, IISC Bangalore	13.02.2023 to 14.02.2023	"Polymath: Groups with norms, Zariski density and determinants" Gave Talk in Popular Mathematics Workshop
		15.02.2023	Research Seminar: "Total Positivity and Polya Frequency Sequences"
30	Prof. Barbara Rüdiger, University of Wuppertal Germany	13.02.2023 to 14.02.2023	Talk " Boltzmann's theory of Thermodynamics and Statistical Physics" in Popular Mathematics Workshop
		15.02.2023	Research Seminar: "On the construction and identification of Boltzmann Processes"
31	Dr. Narayanan N Dept. of Mathematics IIT Madras	13.02.2023 to 14.02.2023	Talk "Counting clubs in town, jig-saw puzzle with graphs" in Popular Mathematics Workshop
32	Prof. Somasundaram K, Amrita Vishwa Vidyapeetham Coimbatore	15.02.2023	Research Seminar: "Graph Analytics for Large Scale Networks"

7. **Other Activities of the Department/Centre:**

Results obtained in research work (from M.S. & Ph.D thesis) of the scholar/faculty (last year sample enclosed from Director's Speech)

Inter disciplinary group achievements of the Departments.

Socially relevant activities carried out by the Department

International collaboration achievements by the Department

Date	Activities
25.02.2023 to 26.02.2023	FORAYS 2023 **Co-ordinators:** Dr. Arunkumar G Dr. SathishKumar A
03.12.2022	Mr Jeetendra Singh Head - Data Science - WNS Global Services (P) Ltd Bangalore (Alumnus of MTech 2000)
17.05.2022	EDUCATIONAL TOUR AND INDUSTRIAL VISIT BY VIVEKANANDA COLLEGE , TIRUVEDAKAM, MADURAI TO DEPARTMENT OF MATHEMATICS, IIT MADRAS

1. **Faculty visit**

Sl.No	Name of the Faculty Member	Purpose of Visit	Date & Venue
1.	Dr. V. Vetrivel		12th April 2022

		BoS Meeting	SDNB Vaishnav College, Chennai
			5th May 2022 KPR Institute, Coimbatore
			14th June 2022 Pes University, Bangalore
			18th June 2022 Loyola College, Chennai
			20th June 2022 Meenakshi College for women,
			5th July 2022 Kumaraguru College of Technology,
			22nd October 2022 Loyola College,Chennai
		Vice-Chancellor Nominee of the Selection Committee for the post of Principal	7th July 2022 In affiliated colleges under University of Madras
		4th Expert Committee meeting for MATRICS closure reports	8th – 9th June 2022 IIT Madras
		4th Expert committee meeting of DST SERB for SRG proposal evaluation	22 - 24th June 2022 Online
		Special invitee 4th PAC meeting of DST-SERB for CRG proposal evaluation	14 -15th July 2022 Goa
		Selection Committee Meeting	20th August 2022 University of Madras
		VC nominee for Principal Selection	09th September 2022 Ewart College for women, Univ. of Madras
		Inspection committee	14th Septembe 2022 AM Jain College, Chennai
		Selection committee meeting	23rd Septembe 2022 IIT Bhilai
		Fifth Expert Committee meeting for the selection of NPDF	13th to 15th October 2022 University of Kashmir, J&K
		Selection Committee Meeting	3rd November 2022 IIT Bhilai
		45th Academic Council Meeting	19th November 2022 Stella Marys College, Chennai
		Faculty Selection Committee Meeting	IIT Tiruppati 3rd February 2023 DBRAIT, Port Blair, A & N Islands 3rd February 2023 IITD&M, Kancheepuram 24th February 2023
2.	Dr. S. Ponnusamy	"Liouville's Theorem and Power Series" Event: Professor R Balakrishnan Endowment Lecture	26th April 2022 National College, Tiruchirapalli
		"Analytic Functions and Power Series" Event: Outreach Program in Mathematics	20th April 2022 Sri Vijay Vidyalaya College of Arts and Science, Dharmapuri
		"Problems on Analytic Functions and Uniqueness Theorem" Event: One week National Level Online Short Term Training Program (STTP) entitled "Emerging Applications of Mathematics and Statistics in Engineering Science and Technology" (EAMSEST-2022)	9th May 2022 Dept. of NIT Rourkela
3.	Dr. Venkata Balaji T E	From Numbers to Geometry – I : The beginnings of Algebra and Number Theory From Numbers to Geometry – II : The beginnings of Topology and Analysis	26th – 27th May 2022 - Science Enrichment Programme IITM-Pravaha-Agastya

		TEW NCM Workshop on Complex Analysis and Geometry	15th to 17th December, 2022 MNIT Jaipur
		RSIC IITM-PSBB-Sastra Selection Interviews	PSBB Nungambakkam (19th February 2023),
			PSBB KK Nagar (25th February 2023)
4.	Dr. Neelesh S Upadhye	Workshop on "Mathematics for Machine Learning"	Gayathri Vidhya Parishad, Vishakapatnam 14th to 17th March 2023
		"Decision Trees in Decision Making"	13th May 2022 Madras Christian College
		"Advanced Statistical Methods in Data Science"	22nd May 2022 IIIT Dharwad
5.	Dr. Barun Sarkar	Research Visit	15th-22nd May, 2022 ISI Bangalore
			IIT Kanpur 30th October 2022 to 5th Novembe 2022
			ISI Bangalore 6th December 2022 to 10th December 2022
6.	Dr. Arindama Singh	As resident Faculty delivered lectures on Linear Algebra at MTTS	12th June – 10th July 2022 IISER Kolkata
		Faculty recruitment meeting	26th August 2022 SN University
7.	Dr. Satyajit Roy	Invited talks in Science Academies Workshops	28th October 2022 JIT, Coimbatore
			10th November 2022 Govt. Science College, Tirupattur
8.	Dr. Y. V. S. S. Sanyasiraju	Expert member BoS in Mathematics	17th September 2022 SRM Institute of Science and Technology
		Expert member BoS in Applied Mathematics	17th August 2022 Andhra University, Visakhapatnam
		Expert Member, BoS in Mathematics	22nd October 2022 RGUKT, Idupulapaya
			15th October 2022 Sairam Engineering College, Chennai
			14th October 2022 CBIT, Prodduturu
		Expert Member, Faculty recruitment	6th October 2022 PSG College of technology, Coimbatore
			1st October 2022 NIT Kurukshetra, Kurukshetra
9.	Dr. A. K. B. Chand	Talk: "Fractals : A Modern tool to study Non-linearity"	21st October 2022 Veer Surendra Sai University Of Technology Burla, Odisha
		Chairman of Expert Committee for UGC	18th to 19th November 2022 NPR College of Engineering & Technology, TN
10.	Dr. S.R. Manam	Industry Expert Lecture - Applications of complex analysis on fluid flow problem	15th Novembe 2022 VIT VELLORE
11.	Dr. A. Sathish Kumar	Expert Lecture - Approximation of Functions by Sampling Operators	18th Novembe 2022 VIT VELLORE
12.	Dr. Anuj Jakhar	General Body Meeting of INYAS	INSA, New Delhi 17th to 19th February 2023
13.	Dr. Satyajit Roy	Invited talk: "Science Academies' Lecture Workshop" on Differential Equations and their Applications In Mathematical Modelling	Jamal Mohamed College (Bharathidasan University) TIRUCHIRAPPALLI 6th to 7th January 2023
		Invited talk online "Quasi-linearization technique for solving fluid flow problems" in FDP on Computational Fluid Dynamics: Modeling and Applications	VIT Vellore 27th February 2023
14.	Dr. Sounaka Mishra	Seminar Assessment Committee Member in Faculty Recruitment	IIITDM Kancheepuram

			24th to 25th February 2023
15.	Dr. Surjit Kumar	Colloborative Research Visit to Prof. Gadadhar Misra	IIT Gandhinagar, Gujarat 3rd March to 11th March 2023
16.	Dr. A. K. B. Chand	Expert for Academic Audit,	NIT Rourkela, 8th December 2022
			17th March 2023
		BoS Meeting	Bennet University, 21st August 2022

2. Student visit

Sl.No	Name of the students	Purpose of Visit	Date &Venue
1.	Bidhan Paul MA19D003	NCM Workshop-Intersection Theory	02.05.2022 - 13.05.2022 IIT Bombay
2.	Raja Kundu MA20D005	NCM Workshop on "Intersection Theory" at IIT Bombay	02.05.2022 - 13.05.2022 IIT Bombay
3.	Shingavekar Pratiksha Satish MA17D004	Collaborative Research Work with co-guide: Dr. Somnath Jha, Department of Mathematics and Statistics. "**p-Selmer groups, ideal class groups and cube sum problem**", (with D. Majumdar and S. Jha), 36 pages, preprint	01.04.2022 - 10.06.2022 IIT Kanpur
4.	V A Kandappan MA16D300	Copper Mountain conference on Iterative Methods "**A robust preconditioner for Lippmann Schwinger equation in two dimension**"	03.04.2022 - 08.04.2022 [Held Online] April 7, Online
5.	K Mohamed Harith MA20D012	Advanced Instructional School on "Algebraic Combinatorics and Spectral Graph Theory"	30.05.2022 - 18.06.2022 Mepco Schlenk Engineering College, Sivakaasi
6.	V A Kandappan MA16D300	SIAM Annual Meeting, AN2022, **Talk titled:** "*A New Preconditioner for Covariance Kernels and Green's Function in 2D*"	11.07.2022 -15.07.2022 [Held Online]
7.	Deblina Dey MA20D750	NCM Workshop on Maximal Cohen - Macaulay Modules	11.07.2022 - 16.07.2022 Chennai Mathematical Institute (CMI), Chennai
8.	Ganapathy K MA19D203	NCM Workshop on Maximal Cohen - Macaulay Modules	11.07.2022 - 16.07.2022 Chennai Mathematical Institute (CMI), Chennai
9.	Mohit Kumar MA15D203	International Conference on Analysis, Inverse Problems and Applications (ICAIPA-2022) **Title of Paper:** Recurrent Fractal Functions for α-Stable Noisy Data	18.07.2022 - 21.07.2022 Department of Mathematics, IIT Madras
10.	Vaishnavi Gujjula MA16D301	SIAM Annual Meeting 2022, Pittsburgh, Pennsylvania, U.S. **Title:** "HODLRnD - A new class of Hierarchical Matrices for elliptic problems in higher dimensions"	13.07.2022 Online Mode
11.	K Mohamed Harith MA20D012	NCMW (National Centre for Mathematics) Workshop on **Maximal Cohen - Macaulay Modules**	11.07.2022 - 16.07.2022 Chennai Mathematical Institute (CMI), Chennai
12.	Mrityunjoy Ghosh MA18D001	Research Visit	18.06.2022 - 26.06.2022 Nancy France
13.	Supriya Karmakar MA18D201	1st International Conference in Fluid, Thermal and Energy Systems (ICFTES 2022)	09.06.2022 - 11.06.2022 NIT Calicut
14.	Anand O R MA20D006	Summer School Workshop on Mathematical Aspects of Quantum Mechanics	01.06.2022 - 12.06.2022 IISc Bangalore
15.	Dr. Sujoy Chakraborty, IPDF	Topics in Algebraic Geometry and Commutative Algebra **Talk Titled:** Brauer group of the moduli stack of stable parabolic PGL(r)-bundles over a curve	18.07.2022 - 23.07.2022 SRM University Amaravathi, Andhra Pradesh
16.	Himanshu Baranwal MA20D202	Fractal Geometry and Related Fields (FGRF-2022 WORKSHOP)	IIIT Allahabad 35.09.2022 - 01.10.2022
17.	Milton Mondal MA18D017	Under Joint Degree Programme	Swinburne University of Technology Australia 10.08.2022 - 09.08.2023
18.	Samir Mondal MA19D750	Under the International Immersion Experience (IIE)	Department of Mathematics and Statistics, Washington State University 14.08.2022 - 18.11.2022

19.	Supriyo Jana MA21D002	Ergodic Theory and Dynamical System	TIFR-ICTS, Bangalore 05.12.2022 – 16.12.2022
20.	Rabeetha V MA19D021	Advance Training in Mathematics, Annual School Foundation – I	Mepco Schlenk Engineering College, Sivakasi 05.12.2022 - 09.12.2022
21.	Sivashankar B MA19d018	Advance Training in Mathematics, Annual School Foundation – I	Mepco Schlenk Engineering College, Sivakasi 05.12.2022 - 09.12.2022
22.	Ganesh babu R MA22D011	Advance Training in Mathematics, Annual School Foundation – I	Mepco Schlenk Engineering College, Sivakasi 05.12.2022 - 09.12.2022
23.	K Mohamed Harith MA20D012	Advance Training in Mathematics, Annual School Foundation – I	Mepco Schlenk Engineering College, Sivakasi 05.12.2022 - 09.12.2022
24.	Jiya Rose Johnson MA20D021	Advance Training in Mathematics, Annual School Foundation – I	Mepco Schlenk Engineering College, Sivakasi 19.12.2022 – 31.12.2022
25.	Chinmay Ajay Tamhankar MA19D017	Academic and Research collaboration (with Prof. Issan Patri) visit to (SMU) Theoretical Statistical & Mathematics Unit	ISI Delhi, New Delhi 21.11.2022 – 03.12.2022
26.	Sagar Sawant MA18D015	Advance Training in Mathematics, Annual School Foundation – I	Mepco Schlenk Engineering College, Sivakasi 19.12.2022 – 31.12.2022
27.	Deblina Dey MA20D750	Advance Training in Mathematics, Annual School Foundation – I	Mepco Schlenk Engineering College, Sivakasi 19.12.2022 – 31.12.2022
28.	BIPLAB PRAMANICK MA19D200	Winter School "DEEP LEARNING"	ISI Kolkata 06.01.2023 to 04.02.2023
29.	Milan Kumar Mal MA21D018	NCM Workshop On Operator Theory and Operator Algebra	IIT Gandhinagar 06.03.2023 to 11.03.2023

3. Activities initiated
Major infrastructure development made in the Department