

ANNUAL REPORT 2019-2020
DEPARTMENT OF MATHEMATICS

1. Introduction:

The Department of Mathematics was established in 1959 along with the institute. It offers the M.Sc. programme in Mathematics, the M.Tech. programme in Industrial Mathematics and Scientific Computing [IMSC] and the 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 of the institute.

The major research areas of the department are the following:

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| <ol style="list-style-type: none"> 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 Equations 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 | <ol style="list-style-type: none"> 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 |
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2. Academic Programmes:

2.1 New discipline/branch introduced: -Nil-

2.2 New courses introduced

2.3 New lab(s) established: -Nil-

2.4 Students on roll as of September 2018+ Ph.D admission in January 2019:

Programme	Number of Students
M.Sc.	85
M.Tech.	40
Ph.D.	112
Total	237

2.5 Endowment prize instituted:

Sl.No	Endowment Prize	Purpose	To be awarded from
1			

2.6 Names of Student/Scholar who attended Conferences/ /Seminars and Symposia Abroad/India:

Names of Student/Scholar who attended Conferences/ /Seminars and Symposia Abroad/India:

Sl. No.	Name of the Research Scholar	Roll No.	Name of the Conference / Seminar / Symposia/ Workshop and Venue	Date	Financial Assistant
India					
1	MRITYUNJOY GHOSH	MA18D001	Short term visit (7 days)	IISER Pune, Pune	27/10/2019
2	VINAY SIPANI	MA19D005	Two- days workshop on How to do a good MS/Ph.D.? and How to write papers/thesis using LaTeX.	MRC Central Library	03/11/2019
3	REPANA DEVENDRA	MA16D020	Conference - Topological Data Analysis (TDA)	CMI Chennai	13/09/2019
4	SUPRIYA KARMAKAR	MA18D201	Conference on Functional Analysis	IIT Bombay	20/10/2019
5	ABHISHEK KESARWANI	MA15D030	3rd SERB School on Nonlinear Dynamics	IIT Patna,Bihta, Patna-801106,India	31/12/2019
6	MRITYUNJOY GHOSH	MA18D001	Short term visit (7 days)	IISER Pune, Pune	10/27/2019
7	VINAY SIPANI	MA19D005	Two- days workshop on How to do a good MS/Ph.D.? and How to write papers/thesis using LaTeX.	MRC Central Library	11-03-2019
8	REPANA DEVENDRA	MA16D020	Conference - Topological Data Analysis (TDA)	CMI Chennai	9/13/2019
9	SUPRIYA KARMAKAR	MA18D201	Conference on Functional Analysis	IIT Bombay	10/20/2019

10	ABHISHEK KESARWANI	MA15D030	3rd SERB School on Nonlinear Dynamics	IIT Patna, Bihta, Patna-801106, India	12/31/2019
11	V A KANDAPPAN	MA16D300	Research Visit	University of Hyogo, Kobe, Japan	11-12-2019
12	MRITYUNJOY GHOSH	MA18D001	Short term visit (7 days)	IISER Pune, Pune	10/27/2019
13	Supriya Karmakar	MA18D001	3rd SERB School on Nonlinear Dynamics	IIT Patna, Bihta, Patna-801106, India	03.12.2019 to 31.12.2019
14	Mrityunjoy Ghosh	MA18D001	AIS- Geometric Analysis (2019)	IIT Bombay	09.12.2019 To 28.12.2019
15	Aradhana Narang	MA16D017	International Conference on Mathematical Techniques and Applications	SRM Institute of Science and Technology, Kanchipuram, TN	30.01.2020 to 01.02.2020
16	Pratiksha Shingavekar	MA17D004	AIS on Modular forms and Galois representations	IISER Tirupati	11.12.2019 to 17.12.2019
17	Subhajit Chanda	MA15D022	Advanced commutative algebra	IIT Kharagpur	23.12.2019 to 01.01.2020
18	Divya Murali	MA17D012	The Bloch - Kato Conjecture	IISER Pune	06.01.2020 to 15.01.2020
19	Chiranjit Mondal	MA17D013	National Workshop on Special Matrices and Stochastic Games (WSMSG 2020)	Sikkim Manipal Institute of Technology, Sikkim	06.01.2020 to 15.01.2020
20	Rajib Sarkar	MA17D006	National Workshop on Special Matrices and Stochastic Games	Sikkim Manipal Institute of Technology, Sikkim, India	02.12.2019 To 14.12.2019
Abroad					
1	VINAY SIPANI	MA19D005	Two- days workshop on How to do a good MS/Ph.D.? and How to write papers/thesis using LaTeX.	MRC Central Library	03/11/2019

2	V A KANDAPPAN	MA16D300	Research Visit	University of Hyogo, Kobe, Japan	11/12/2019
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2.7 Names of students/scholars who won outside prizes and awards:-Nil-

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 the Donor
1				

3. Faculty and their activities:

3.1. Faculty:

Name and Qualifications	Major area of specialization (only 3 areas)
PROFESSORS:	
Dr. 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 & 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
Dr. 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
Prof. M.Thamban Nair, Ph.D. (IIT Bombay)	Applicable Functional Analysis: Spectral approximation, Operator equations, Inverse & Ill-posed problems.
Prof. P. Veeramani, Ph.D. (IIT Bombay)	Fixed Point Theorems and their Applications to Problems in Optimization and Best Approximation, Fuzzy Set Theory
Prof. V. Vetrivel, Ph.D. (IIT Madras)	Non-Smooth Optimization, Fixed Point Theory, Complementarity problems
Dr. A.V.Jayanathan, Ph.D. (IIT Bombay)	Commutative Algebra and Algebraic Combinatorics
Dr. A.J. Shaiju, Ph.D. (IISc, Bangalore)	Game Theory, Systems and Control Theory
ASSOCIATE PROFESSORS:	
Dr. Kalpana Mahalingam, Ph.D. (Univ. of South Florida, Tampa)	Theory of codes, DNA Computing, Combinatorics of words
Dr. Kunal Krishna Mukherjee, Ph.D. (Texas, A&M)	Operator Algebras
Dr. Neelesh S. Upadhye, Ph.D. (IIT Bombay)	Probability Theory and applications
Dr. Shruti Dubey, Ph.D. (IIT Kanpur)	Nonlinear Analysis of Functional differential equations, Mathematical Study of Ferromagnetic systems
Dr. Sounaka Mishra, Ph.D. (ISI, Kolkata)	Discrete Mathematics, Approximation Algorithm, Combinatorial Optimization
Dr. R. Balaji, Ph.D. (IIT Madras)	Linear Algebra and Optimization
Dr. V.Uma, Ph.D. (IMSC Chennai)	Topology and Geometry of Toric Varieties and Related Spaces
ASSISTANT PROFESSORS:	
Dr. P. Aprameyan, Ph.D	Analysis on symmetric spaces, representations of real Lie groups, geometric quantization.
Dr. T.V.Anoop, Ph.D.(IMSc Chennai)	Linear and Nonlinear Partial Differential Equations, Nonlinear Functional Analysis
Dr. Arijit Dey, Ph.D.	Algebraic Geometry
Dr. Dipramit Majumdar Ph.D. (Brandeis University)	Algebraic Number Theory, p-adic aspects of modular forms and Galois representations
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	Fluid Mechanics: hydrodynamic instability; Nonlinear dynamics; Numerical PDE; Granular flows; Pattern

(JNCASR, Bangalore)	formation
Dr. Ramesh Kasilingam, Ph.D IIT Bombay	Differential and algebraic topology and their interactions with differential geometry
Dr. Santanu Sarkar, Ph.D. (ISI,Kolkata)	Cryptology & Computational Number Theory
Dr. Sarang S.Sane, Ph.D. (TIFR, Bombay)	Commutative Algebra, Homological Algebra, Algebraic K-theory, Algebraic Geometry
Dr. Sivaraman Ambikasaran, Ph.D (Stanford Univ.)	Numerical Linear Algebra, Fast Algorithms, and Scientific Computing
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
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 algebra
Dr. T.E. VenkataBalaji, Ph.D. (CMI, Chennai)	Algebraic Geometry and Commutative Algebra
EMIRITIES FACULTY:	
Prof.S.H.Kulkarni, Ph.D. (IIT Bombay)	Functional Analysis, Numerical Analysis
Prof. R. Usha, Ph.D. (IIT Madras)	Fluid Dynamics
INSPIRE FACULTY:	
Dr. J. Jaikrishnan Ph.D (IISC Bangalore)	Complex Analysis
ADJUNCT FACULTY	
Dr. S.Kesavan	Partial Differential Equation- Homogenization, Isoperimetric inequality
INSTITUTE PDF:	
Dr. J.V. Ramana Reddy Dr. Tarun Kumar Chakra Dr. C. Gunasundari Dr. N. Kousalya	

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

SI. No.	Coordinator(s)	Title	Period
Conference:			
1	Dr. T V Anoop	AIS ON GEOMETRIC MEASURE THEORY AND PDE in the Department funded by National Center for Mathematics.	3 rd to 15 th June 2019
2	Dr. Shruti Dubey Prof. Ch. Srinivasa Rao	Evolution Equations : Theory and Computations	12/8/2019 to 17/8/2019
3	DEPARTMENT LEVEL	NATIONAL SYMPOSIUM ON MATHEMATICS AND ITS APPLICATIONS (NSMA 2019)	22-12-2019

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

Sl. No.	Name of faculty	Topic of Lecture	Institution	Date
1	Prof. S. Sundar	FDP Talk	Vel Tech Chennai	11/05/2019
		FDP Talk	KL University Vijayawada	24/5/2019
2	Prof. Arindama Singh	Six Lectures on Linear Algebra	at Ramanujan Institute of Adv studies, Chennai,.	May 8-13, 2019
		Eleven lectures on Linear Algebra at NBHM programme in Statistics	KN College, Vijayawada,	Dec 1-13, 2019
		Three lectures on Combinatorics at IMP Camp	KVIIT, Chennai,	Dec 26-27.
		Goedel's incompleteness theorems	IIT Tirupati,	Mar 12, 2020

3	Prof. Satyajit Roy	8 Lectures in TEQIP on FMNA-BVP	NIT Calicut	5-9.10.2019
4	Dr. Shruti Dubey	Abstract Cauchy Problem for Navier-Stokes Equations with Caputo Derivative	NIT Calicut	30.12.2020
		Functional Equations	KV School, IIT Madras	31/12/2019 01/01/2020
5	Prof. S. Ponnusamy	Colloquium Talk	Hunan Normal University, China	14/06/2019
		Colloquium Talk	Hengyang Normal University, China	05/06/2019
		Colloquium Talk	Guilin University of Technology, China	03/06/2019
		Colloquium Talk	Hunan Normal University, Changsha, China	15/06/2019

3.5. Invited Talks/Paper Presentation at Conferences/Symposia/Workshop

Sl. No.	Name of faculty	Programme	Paper/Talk/Lectures	Date
1	Prof. S. Sundar	INSPIRE TALK	IISER Trivandrum	16/5/2019
		Invited Talk ICADE 2019	IIT Mandi	17/06/2019 to 18/06/2019
2	Dr. Priyanka Shukla	3rd IMA Conference on Dense Granular Flows	Shear banding instability in arbitrarily inelastic dense granular shear flows	01/07/2019 to 04/07/2019
3	Dr. Priyanka Shukla	8-th International Symposium on Bifurcations and Instabilities in Fluid Dynamics	Miscible-reactive viscous fingering in a porous medium	16/07/2019 to 19/07/2019
4	Prof. A.K.B. Chand	CMMSE 2019	Invited Talk on Quantum α -fractal Approximation	04/07/2019
5	Prof.S. Sundar	Invited Lecture	SRM University	30/07/2019
		Invited Talk	IISER Trivandrum	22/8/2019
		Invited Talk - DAAD Workshop	IIT Madras	11.10.2019

		Invited Talk - NCM Workshop	Bharathiyar University	20.11.2019
6	Prof. YVSS Sanyasiraju	Delivered TWO lectures on Numerical solutions of parabolic partial differential equations,	IIT Madras	13/8/2019 to 14/8/2019
		AICTE sponsored short term course on Evolution equations : theory and computation been conducted by Department of Mathematics		
		Delivered TWO lectures on Matlab introduction and practice in the AICTE sponsored short term course on Evolution equations : theory and computation been conducted by	Department of Mathematics, IIT Madras During	Aug 12 - 17, 2019
		Delivered an invited lecture on RBF functions with optimized shape parameter for solving Partial Differential Equations	at NIT Calicut	17/07/2019
7	Prof. M. Thamban Nair	Gave an invited talk on "Lax-Milgram lemma in Banach space setting at IWM -Regional Workshop "Research Opportunities in Mathematics"	NIT - Meghalaya	19.10.19 to 21.10.2019
8	Prof. Sathyajit Roy	Invited talk in National Conference KSTA	Karnataka Univ., Dharwad	7-9.11.2019
9	Prof. M. Thamban Nair	Invited talk at a National Workshop on "PDE and Applications"	Central University of Kerala	19.12.2019
10	Prof. M. Thamban Nair	Lectures: "Spaces and Operators"	College Tachers at University of Calicut	14.12.2019
11	Prof. Arindama Singh	Talk: Analysis (8 Talks)	Mini-MTTS	01.01.2020 to 06.01.2020

3.6. Visit to other Institutions

S.No	Name of faculty	Programme	Venue	Date
1	Prof. S. Sundar	Ph.D. Viva	JNTU Anantapur	24/04/2019
		FDP Talk	Vel Tech Chennai	11/05/2019
		DST-SERB Review Meeting	KIIT Bhubaneshwar	17/5/2019 and 18/5/2019
		Ph.D. Viva	JNTU Anantapur	24/04/2019
		DST-SERB Review Meeting	KIIT Bhubaneshwar	17/5/2019 and 18/5/2019
		Ask the Expert – Mathrubhumi	Trivandrum	21/5/2019
		Ask the Expert – Mathrubhumi	Calicut	28/5/2019
		Ask the Expert – Mathrubhumi	Kochi	31/5/2019
2	Prof. Arindama Singh	Collaborative research work	IIT Kanpur	June 2-18, 2019
		Review of GATE syllabus in Statistics	IIT Kanpur	Nov 2-3, 2019.
		Curriculum meeting at Dept of Computer Science.	IIT Pallakad	Nov 28, 2019
		KVPY interview, Organized	IISc., Bangalore.	Feb 13-15, 2020
		Faculty Recruitment	VIT, Vellore	Feb 22, 2020.
3	Prof. Satyajit Roy	Ph. D. Viva	IIT Guwahati	29-05-2019
		Ph. D. Viva	Jawaharlal Nehru Technological University, Ananthapur, A.P	31-05-2019
4	Dr. Shruti Dubey	Comprehensive DC meetings	Vellore Institute of Technology, Chennai	22-05-2019
5	Prof. S. Sundar	Ph.D Viva	Alagappa University, Karaikudi	12/06/2019
		Ph.D. Viva	IIT Roorkee	10/07/2019 to 12/07/2019

		Department Review Expert	Thiyagaraja College of Engg. Madurai	04/07/2019
		Chief Guest – Mathematics Association	Meenakshi Women's College, Chennai	08/07/2019
		Board of Studies Meeting	NIT Trichy	17/07/2019
		Ph.D. Review Meeting	Shastra University, Thanjavur	17/07/2019
6	Dr. Shruti Dubey	DC Committee Meeting	SRM Institute of Science and Technology, Chennai	25/07/2019
7	Prof. S. Sundar	Faculty Selection	NIT Surathkal	2/8/2019 & 3/8/2019
		DST-SERB PAC Meeting	IISc Bangalore	20/8/2019 & 21/8/2019
		DST-TARE PAC meeting	New Delhi	27/8/2019
8	Prof. A.K.B. Chand	Comprehensive meetings for Ph.D. students	SRM University, Chennai	16/9/2019
9	Prof. S. Sundar	Chief Guest - Math Fest	Bala Vidhya Mandir School, Adyar, Chennai	19.10.2019
		Chief Guest and Talk - PALS FTP Programme	IIT Madras	18.10.2019
		Selection Committee - Faculty Recruitment	IIT Roorkee	29.11.2019
		Ph.D. Viva	IIT Banaras Hindu Univ.	07.11.2019
		Ph.D. Viva	IIT Kharagpur	11.11.2019
		Chief Guest - Organised by Times of India, GANIT UTSAV	Saraswathi Vidhyalaya, Chennai	16.11.2019
		Ph.D. Viva Conducted	JNTU, Ananthapur	25.11.2019
10	Prof. YVSS Sanyasiraju	PhD thesis and Viva-Voce examiner	NIT Warangal	06/11/2019
		Ph.D. thesis and Viva- Voce examiner	NIT Agartala	04/11/2019
		Internal expert member PhD Viva Voce examination	SRM IST, Chennai	30/08/2019
		Expert Member, PhD Viva voce examination	JNTU, Ananthapur	July 19, 2019
		Expert Member, M.Phil Viva voce examination	JNTU, Ananthapur	19/07/2019
		Expert Member JRF to SRF conversion of a CSIR fellowship candidate	NIT Calicut	17/07/2019
		Expert Member PhD Viva voce examination	JNTU, Ananthapur	28/05/2019

		External expert member Comprehensive viva-voce examination	SRMIST	14/05/2019
11	Prof. M. Thamban Nair	Faculty recruitment related work	IISER TVM	11.10. 2019
		DAB-Committee meeting.	NIT Kozhikkode	01.11.2019
12	Prof. A K B Chand	Doctoral Committee Meeting	VIT Vellore	29.11.2019
		Doctoral Committee Meeting	SRM University	21.10.2019
		Joint Research Work	IIT Bhubaneswar	25.10.2019
13	Dr. A V Jayanthan	Irreducibility in polynomial rings	PSG College of Arts and Science, Coimbatore	18.11.2019 to 22.11.2019
		Galois Theory	Victoria College, Palakkad	28.10.2019
14	Prof. S. Sundar	Faculty Selection	IIT Ropar	05.12.2019
		Staff Selection	ISRO, Bangalore	14.12.2019
		MATRICS Meeting	SERB, Delhi	19.02.2020
		Faculty Selection	NIT, Calicut	10.01.2020
		Faculty Selection	IIT, Palakad	23.01.2020
		Research discussion meeting	University of Colombo, Srilanka	24.01.2020
		SERB Research Award Selection	New Delhi	29.01.2020
15	Dr. Shruti Dubey	Ph.D. Viva-Voce	NIT Calicut	30.01.2020
16	Prof. S R Manam	Ph.D. Viva-Voce	IIT (ISM) Dhanbad	27.01.2020
17	Prof. A K B Chand	Moderation work for national level examination	NCERT- Delhi,	19.01.2020 to 21.01.2020
18	Prof. M. Thamban Nair	Attended as "Visitor's Nominee" the faculty sele ction committee meetings of Mathematics, Physics and Chemistry.	<i>NIT Trichy</i>	<i>16,17,18 March 2020</i>
19	Prof. V Vetrivel	Board of studies meeting	Alagappa University, Karaikudi	06.03.2020

3.7. Visits abroad by faculty:

Sl. No.	Name of faculty	Country visited	Date	Purpose of visit	Funding
1	Prof A. K. B. CHAND	Israel	21/05/2019 to 01/06/2019	Research collaboration with Technion and Tel-Aviv University	Institute and MATRICS project
2	Dr. Suhas J. Pandit	Spain	06/06/2019 to 17/05/2019	Research collaboration	Institute and MATRICS project
		Brussels, Belgium	13/5//2019 to 14/5/2019		
		Paris, France	17/05/2019 to 18/05/2019		
		Aachen, Germany	14/5/2019 to 17/5/2019		
3	Dr. Anoop	Czech Republic	8/5/2019 to 19/5/2019	Research collaboration with University of West Bohemia, Pilsen	Institute and MATRICS project
4		Italy	20/5/2019 to 24/5/2019	International Conference on Elliptic and Parabolic, Gaeta	
5	Prof. K.C. Sivakumar	USA	June-July, 2019	Visited the Department of Mathematics, University of California Santa Barbara and gave a short course on Nonnegative Matrices	Others
		Brazil	July, 2019	Organized a contributed Minisymposium on "M-matrices, Inverse M-matrices and their generalizations" In the International Linear Algebra Society (ILAS) Conference held at Rio De Janeiro, Brazil	Others
6	Prof. Thamban Nair	Singapore	13-06-2019 to 08-07-2019	Visited School of Mathematics, Sun Yat-sen University, Guangzhou, China, As "Visiting Mathematician"	Others

7		China	29-06-2019	Gave a colloquium talk on "An Inverse problem in PDE" at School of Mathematics, Sun Yat-sen University, Guangzhou, China	Others
8	Prof. S. Ponnusamy	University of Turku, Turku, Finland (Supported by Indo-Finland Joint Call for Mobility of Researchers, DST, India)	December 22, 2019- March 15, 2020	Visiting Professor (Collaborative Research and Lecture Series)	Others
		Kazan Federal University, Kazan, Russia	August 31- September 13, 2019	Visiting Professor (Collaborative Research with I. R. Kayumov and Lecture Series)	Others
		Hunan Normal University, Changsha, China	May 25- June 20, 2019	Visiting Professor (Collaborative Research with Y.Li, and Lecture Series)	Others
9	Prof. S. Ponnusamy	University of Turku, Turku, Finland	December 27, 2019	Plenary Speaker at the one day workshop on "Intrinsic geometry of domains and related topics" a) Impact of Bohr's phenomenon for mappings from disk into various domains	Others
			February 19, 2020	Plenary Speaker at the one day symposium on "Analysis" b) Problem of Gromova and Vasil'ev on integral means, and Yamashita's conjecture for convex mappings	Others

	Prof.S. Ponnusamy	Hunan Normal University, Changsha, China	June 15, 2019	Plenary Speaker at the workshop on "Harmonic and Quasiconformal Mappings" as part of lecture series On the logarithmic coefficients of univalent functions and related investigations	Others
		Hunan Normal University, Changsha, China	June 14, 2019	Colloquium talks on "Problem of Gromova and Vasil'ev on integral means, and Yamashita's conjecture for conformal mappings"	Others
		Hengyang Normal University, Hengyang, China	June 05, 2019	Colloquium talks on "Bohr inequality for harmonic mappings and beyond"	Others
		Guilin University of Technology, Guilin, China	June 03, 2019	Colloquium talks on "Simple Journey to the family Harmonic Mappings "	Others
		Hunan First Normal University, Changsha, China	May 27, 2019	Colloquium talks on "On the Bohr inequality with a fixed zero coefficient"	Others
10	Dr. Shruti Dubey	Spain	15-07-2019 to 19-07-219	Paper presentation and session chair at 9 th International Congress on Industrial and Applied Mathematics, University of Valencia, Spain	Others
12	Dr. Santanu Sarkar	Switzerland	15-07-2019 to 07-08-2019	Visit to Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland in connection with Research collaboration	Others

13	Dr. Soumen Sarkar	Korea	07/07/2019 to 13/07/2019	Visit to Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea in connection with Research Collaboration	Others
		Canada	14/07/2019 to 20/07/2019	Visit to University of Regina, Saskatchewan Canada in connection with Research collaboration	Others
14	Dr. Neelesh S. Upadhye	Taiwan	25/06/2019 to 27/06/2019	3 rd International Conference on Econometrics and Statistics at National Chung Hsing University, Taichung, Taiwan in Connection with Research Collaboration	Others
15	Prof. A.K.B.Chand	Spain	06/07/2019 to 14/07/2019	Joint Research Collaboration, University of Zaragoza, Spain	Others
		Spain	17/07/2019	Minisymposium on Recent Advances in Iterated Function Systems and Fractal Functions at ICIAM-2019, University of Valencia, Spain	Others
16	Prof.S R Manam	Taiwan	22/09/2019 to 26/09/2019	5 th International Working group on Rotational Seismology, Sun Moo Lake, Taipei	CPDA
17	Prof. S. Ponnusamy	Kazan, Russia	07/09/2019 to 12/09/2019	Kazan XIV School Conference on Function Theory (Kazan 2019)	Institute
18	Dr. Soumen Sarkar	China	07/08/2019 to 12/08/2019	X'ian Jiaotong-Liverpool University, Suzhou, China	Institute
19			12/08/2019 to 18/08/2019	Fudan University Shanghai, China	Institute
20	Dr. R. Balaji	Czech Republic	08/09/2019 to 13/09/2019	International Conference on Matrix Analysis and its Application MAT-TRIA 2019, Liblice.	CPDA
21	Prof. S. Ponnusamy	China	27/05/2019 to 05/07/2019	Hunzen Normal University, Changsha, Hunan, China	Project

22	Prof.S R Manam	Taiwan	22/09/2019 to 26/09/2019	5 th International Working group on Rotational Seismology, Sun Moo Lake, Taipei	CPDA
23	Prof. S. Ponnusamy	Kazan, Russia	07/09/2019 to 12/09/2019	Kazan XIV School Conference on Function Theory (Kazan 2019)	Institute
24	Dr. Soumen Sarkar	China	07/08/2019 to 12/08/2019	X'ian Jiaotong-Liverpool University, Suzhou, China	Institute
25			12/08/2019 to 18/08/2019	Fudan University Shanghai, China	Institute
26	Prof. YVSS Sanyasiraju	Dubai, United Arab Emirates	26 - 31.10.2019	GATE 2020	IIT Madras
27	Dr. Soumen Sarkar	USA	02 - 08.11.2019	Research Collaboration	Partial with CPDA
28	Dr. Santanu Sarkar	Japan	02 - 12.11.2019	Research Collaboration	Partial with CPDA
29	Dr. V Uma	Japan	14 - 23.11.2019	Research Collaboration	Partial with CPDA
30	Prof. S. Sundar	University of Colombo, Srilanka	24.01.2020 to 26.01.200	Research Collaboration and Discussion Meeting	University of Colombo
31	Dr. Jayanthan A V	McMaster University, Hamilton, Canada	19-.01.2020 To 24.01.2020	Attend workshop	Partial from CPDA
32	Prof. K C Sivakumar	USA	01.01.2020 to 30.04.2020	Visiting Faculty, University of California, Santa Barbara,	
33	Dr. Neelesh Upadhye S	London, UK	14-12-2019 to 16-12.2019	12 th Intl. Conference	CPDA
34	Prof. S. Ponnusamy	Finland	December 22, 2019- March 15, 2020	Visiting Professor, University of Turku, Finland	(Supported by Indo-Finland Joint Call for Mobility of Researchers, DST, India)

		Russia	August 31-September 13, 2019	Visiting Professor, Kazan Federal University, Kazan, Russia (Collaborative Research with I. R. Kayumov and Lecture Series)	Others
		China	May 25-June 20, 2019	Visiting Professor, Hunan Normal University, Changsha, China (Collaborative Research with Y.Li, and Lecture Series)	Others
35	Dr. Priyanka Shukla	University of Warwick, UK	15 May –15 July, 2019	Research discussion and conference	Others
36	Prof. A V Jayanthan	Macmaster University, Hamilton, Canada	19.01.2020 to 24.01.2020	Research visit	Others
		Dalhousie University, Halifax, Canada :	24.01.2020 to 26.01.2020	Workshop	Others

3.6 Honours and Awards obtained by faculty:

Sl. No.	Name of faculty	Name of Award	Awarded by	Date of award
Awards:				
	Prof. Ponnusamy	Elected as a PRESIDENT of the "Ramanujan Mathematical Society", India	"Ramanujan Mathematical Society", India	April 2019 -March 2022
1	Prof.K.C. Sivakumar	Fellowship Award	ASEM-DUO	November, 2019
3	Dr. Sarang S. Sane	Young Faculty Recognition Award – 2019		2019
4	Dr. Sivaram Ambikasaran	Young Faculty Recognition Award – 2019		2019

5	Dr. Kunal Krishna Mukherjee Associate Professor	Exploratory Research proposals 2019-20	Project Title: On uniformly bounded co-ordinates in GNS Spaces	December,2019
Nominations				
1	Prof. S. Sundar	Nominated as a DAAD Research Ambassador		2018-22

3.9. Fellowships of Academies and Professional Societies:

	Dr. Shruti Dubey	Elected member of NASI		2019
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3.10 Journal Editorial Boards:

1	Prof. Ponnusamy	Editor On Applied Analysis, Mathematical Modeling and Computing Techniques (ICAAMMCT - 2018): Proceedings of the ICAAMMCT-2018 Conference held at The Gandhigram Rural Institute (GRI), Gandhigram Pub.: J Analysis, Springer Eds.: P. Balasubramaniam, P. Muthukumar, S. Ponnusamy, and R. Uthayakumar	ISSN: 0971-3611 (Print) 2367-2501 (Online) 662pp	2019
2	Prof. K.C. Sivakumar	Nominated as Associate Editor of the Electronic Journal of Linear Algebra	Electronic Journal of Linear Algebra	2019

4. Design and Development Activities:--Nil--

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

4.2. New facilities added or major equipment procured: -Nil-

4.3. Patents: --Nil--

4.3.1 Patents filed:--Nil--

4.3.2 Patents awarded:--Nil--

5. Research and Consultancy: Nil

5.2 Industrial Consultancy projects: (on going & new) --Nil--

5.3 RBIC projects: (on going & new)-

5.4 Retainer Consultancy: (on going & new)--Nil--

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

5.6 Faculty members participation with other institution under MoU:--Nil--

Research Publications of the faculty members & research scholars:

5.7 Books : (Total No.)

5.8 (a) Total No. of papers published in Refereed National Journals :
.....2.....

5.8.(b) Total No. of papers published in Refereed International Journals:6.....

5.8.(c) Total No. of papers presentation in National Conferences

(i) In proceedings as full paper :

(ii) As abstract :

5.8 (d) Total No. of papers presentation in International conferences

(i) In proceedings as full paper :

(ii) As abstract :

Note: Only books / papers which are published between 1.4.2017 and 31.03.2018 are to be given. Complete details to be furnished in file accompanying excel sheet.

a. In Refereed International Journals: Excel sheet

b. In Proceedings of International Conferences: Excel sheet

7. Other Activities of the Department/Centre:

Seminar talks

Sl. No.	Name of the Faculty	Title	Date
1	Prof. Rajeeva Laxman Karandikar CMI	Making sense of Opinion Polls	11/04/2019
2	Dr. Divyum Sharma University o Waterloo Canada	Number of representations of integers by binary forms	25/04/2019
3	Prof. Thomas Goetz Mathematik Institut Universitaet Koblenz-Landau Germany	Optimal Control and Applications- a rigorous mathematical approach"	22/04/2019 to 26/04/2019
4	Prof. S. Thangavelu Department of Mathematics IISc Bangalore	Sparse Bounds for Lacunary Spherical Maximal function on the Heisenberg Group	
5	Dr. Arideep Saha Indian Statistical Institute Chennai	System of Hodge bundles and opers.	12/04/2019
6	Prof. Satadal Ganguly Indian Statistical Institute Kolkata	Polya-Vinogradov inequality for representations of $GL(n, F_p)$	18/04/2019
7	Prof. S. Thangavelu Department of Mathematics IISc Bangalore	Sparse Bounds for Lacunary Spherical Maximal function on the Heisenberg Group	25/06/2019
8	Dr. K. Sumesh, IIT Madras	On PPT Square Conjecture	08/08/2019
9	Dr. Parthanil Roy, ISI Bangalore	Continued Fractions, the Chen-Stein Method and Extreme Value Theory	22/08/2019
10	Ayineedi Venkateswarlu, ISI Chennai	Unimodular Polynominal Matrices Over Finite Fields	29/08/2019
11	Dr. Tapas Pandit, IISc., Bangalore	An Overview of Isogeny-based Cryptosystems	12/09/2019
12	Dr. Ramesh Kasilingam, IIT Madras	Inertia Groups and Smooth Structures on Complex Projective Spaces	19/09/2019

13	Prof. Sourish Das, CMI	Understanding the Arctic Sea Ice Melting Via Functional Data Analysis	26/09/2019
14	Dr. Pradeep Sarvepalli, IIT Madras	Topological quantum codes: An Introduction	03/10/2019
15	Dr. R. Balaji, IIT Madras	Distance matrices	10/10/2019
16	Prof. V. Raghavendra, IIT Tirupathi	Introduction to Finite Element Analysis and Lax-Milgram theorem	16-18/10/2019
17	Dr. Meghana Nasre, IIT Madras	Classified Matchings with one sided preferences	17/10/2019
18	Dr. Suhas Jaykumar Pandit, IIT Madras	Embeddings of 3-manifolds in 5 dimensional manifolds	24/10/2019
19	Dr. Mithun M, IISER, Thiruvananthapuram	Metrics on Completely Positive Maps	21/11/2019
20	Dr. T. E. Venkata Balaji, IIT Madras	The Nexus Between Good Definitions and Universal Properties in Mathematics	31/10/2019
21	Dr. Anand Sawant, TIFR Mumbai	Homotopy invariance in commutative algebra and algebraic geometry	07/11/2019
22	Dr. Somesh Kumar Professor, Department of Mathematics, IIT, Kharagpur	"On the Problem of Estimating Parameters of Directional Distributions"	17.12.2019
23	Prof. Dr. Joerg Kuhnert Fraunhofer ITWM, Germany	"Meshfree Numerical Modeling of Partial Differential Equations"	0/01/2020 to 10/01/2020
24	Dr. Alastair Darby Xi'an Jiaotong-Liverpool University	"Cluster Algebras and Algebraic PL-Invariants"	19.12.2019
25	Ms.Katrin Kuhnert International Relations Office TU Kaiserslautern, Germany	"Higher Studies Opportunities and Life at Kaiserslautern"	08.01.2020
26	Prof. V. Srinivasa Chakravarthy Dept. of Biotechnology, IIT Madras	"Computing with Rhythms: The search for Deep Oscillatory Neural Networks"	16.01.2020
27	Dr. Sivaram Ambikasaran Dept. of Mathematics, IIT Madras	"Tensor decompositions and applications"	23.01.2020

28	Prof. Ratnasingham Shivaji University of North Carolina at Greensboro, USA	"An Introduction to the Analysis of Steady State Nonlinear Reaction Diffusion Equations"	27.01.2020 to 31.01.2020
29	Dr. K. Arul Prakash Dept. of Applied Mechanics IIT Madras	"Finite Element Method for thermo-fluid dynamics applications"	30.01.2020

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

1. Faculty visit
2. Student visit
3. Activities initiated

Major infrastructure development made in the Department

5. Research and Consultancy:

5.1 Sponsored Research Projects: (on going & New)

Sl. No.	Title	Period	Funding Agency	Amount (₹)	Co-ordinators
1.	Mathematical Study of Anomalous Diffusion Processes via Partial Differential Equations	2020-2023	SERB (Science and Engineering Research Board)	6,60,000	Shruti Dubey

5.3 RBIC projects: (on going & new)

Sl. No.	Name of faculty	Title	Industry

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

A delegation, consisting of 12 members, includes the President of the UCA, Prof. Jean-Marc Gambaudo and other Program Directors of the research and excellence programs offered by the University visited the department on 18/01/2018. The delegation met the faculty members to discuss potential synergies along the lines of the "EUR" projects, Ecoles Universitaires de Recherche programs which covers all the fields of expertise that UCA offers. These include –

1. EUR "INnovative Concepts In Science and Engineering" INCISE
2. EUR "UCA Next Generation Life Scientists"
3. EUR "Digital Systems for Humans"
4. EUR "ELMI : Economics, Law and Management of Innovation"