

**UNIVERSITY OF CALICUT  
(IQAC)**

**INFORMATION FOR  
ACADEMIC AND ADMINISTRATIVE AUDIT OF THE DEPARTMENT OF  
MATHEMATICS**

**Year: 2019-21**

**(Provide information for last five years from 2016-17 to 2020-2021)**

1. **Name of the Department: Mathematics**
2. **Year of establishment: 1976**
3. **Courses offered: PG, M. Phil., Ph.D., Others**

Year	PG	M.Phil	Ph.D.	Others
2017-18	M.Sc. Mathematics	M.Phil. Mathematics	Ph.D. Mathematics	-
2017-18	M.Sc. Mathematics	M.Phil. Mathematics	Ph.D. Mathematics	-
2018-19	M.Sc. Mathematics	M.Phil. Mathematics	Ph.D. Mathematics	-
2019-20	M.Sc. Mathematics	M.Phil. Mathematics	Ph.D. Mathematics	-
2020-21	M.Sc. Mathematics	M.Phil. Mathematics	Ph.D. Mathematics	-

4. **Courses introduced during last 4 years:**

Year	Programme	Course	Credits	Particulars
2017	M.Sc.	1. MAT2C10 Multivariable Calculus and Geometry	4	Core
		2. MAT3E02 Commutative Algebra	4	Elective
		3. MAT3E04 Linear Programming and its Applications	4	Elective
		4. MAT3E05 Representation Theory	4	Elective
		5. MAT4E03 Advanced Topics in Measure and Integration	4	Elective
		6. MAT4E04 Algebraic Graph Theory	3	Elective
		7. MAT4E09 Non Linear Programming	2	Elective
		8. MAT4E11 Wavelet Theory	4	Elective
2018	Ph.D.	9. Domination in Graphs		Elective
2019	M.Sc.	10. MAT1A01 Ability enhancement Course	2	Audit
		11. Professional Competency Course	2	Audit
		12. MAT3E04 Cryptography	3	Elective
	M.Phil.	13. Topology	4	Elective
		14. Fundamentals of Domination in Graphs	4	Elective

	Ph.D.	15. Spectrum of Graphs		Elective
		16. Graph Planarity and Hypergraphs		Elective

**5. Does the department have Academic flexibility? If yes since when?**

Yes. Since its existence 1976.

**6. Interdisciplinary programs offered and departments involved: Nil**

**7. Courses conducted in collaboration with other universities and Institutions: Nil**

**8. Details of programmes discontinued, if any, with reasons: Nil**

**9. Examination System: Annual/ Semester/Choice Based Credit System/ Credit and Grading system/ any other system, specify:**

Choice Based Credit Semester System-CCSS for MSc,

Elective Semester system for PhD and MPhil

**10. Participation of the department in the curriculum development for courses offered by the Departments:**

The Department has complete freedom in designing curriculum, course contents and pattern of question papers, in tune with the common structure of the University regarding total number of credits and compulsory audit courses. The Syllabus prepared by the faculty members with the approval of the Department Council is placed in higher academic and administrative statutory bodies (PG Board of Studies, Academic Council).

**11. Does the department have different syllabus than the one used by university for PG courses?**

Yes. The department has different syllabus than the one used by the affiliated colleges in the university.

**12. Number of teaching posts sanctioned, filled and vacant.**

Designation	Sanctioned	Filled	Filled under CAS	Remarks
Professor	1	0	2	(Appointments - in progress)
Associate Professor	1	1 (Promoted to Professor)	1	
Assistant Professor	5	5 (1 promoted to Professor, 1 promoted to Associate professor)	0	

Total	7	6	3	
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13. Faculty profile with name, qualification, designation, experience, nature of appointment (confirmed/ probation/temporary):

a) Appointed on Government Sanctioned Post.

Name	Designation	Qualifications	Teaching/Research Experience	Nature of appointment
Dr.Anil Kumar.V	Professor	M.Sc.,M.Phil., Ph.D.	23	Confirmed
Dr.Preethi Kuttipulackal	Associate Professor	M.Sc.,BEd, M.Phil., Ph.D. NET-LS	21	Confirmed
Dr.Raji Pilakkat	Professor	M.Sc., B.Ed., M.Phil., Ph.D.	30	Confirmed
Dr.Sini.P	Assistant Professor	M.Sc, Ph.D, B.Ed NET-LS	10	Confirmed
Dr.P.T. Ramachandran	Professor	M.Sc, PhD	34	Confirmed (Retired on 31.05.2019)
Dr.Prasad T.	Assistant Professor	M.Sc., M.Phil., Ph.D.	7.5	On Probation
Dr. Mubeena T.	Assistant Professor	M.Sc, PhD	8	On Probation

b) Appointed from University Fund (Ad-hoc/Guest/contract Faculty).

Name	Designation	Qualifications	Teaching/Research Experience	Nature of appointment,.
Dr. Sreekanth K	Assistant Professor	MSc. Ph.D	1 year, 6 months	Contract (12.7. 2019- 03.02. 2021)
Priya K	Assistant Professor	MSc., JRF	8 months	Contract (17.7. 2019- 31.03. 2020)

14. List of Visiting Fellows/Teachers, Adjunct and Emeritus Professors, (for last 4 years):  
Nil

15. Percentage of classes taken by temporary/visiting faculty (programme- wise information):

<u>MSc</u>	<u>MPhil &amp; PhD</u>
June 2016- March 2017 : 0	June 2016- March 2017 : 0
June 2017- March 2018 : 0	June 2017- March 2018 : 0
June 2018- March 2019 : 0	June 2018- March 2019 : 0
June 2019- March 2020 : 40	June 2019- March 2020 : 0

**16. Programme-wise Student Teacher Ratio: (Average of 4 Years)**

M.Sc. : 8:1

M.Phil. : 1:1

Ph.D. : 23:5

**17. Number of academic support staff (technical) and administrative staff sanctioned, filled and vacant:**

Sl. No.	Posts	Sanctioned posts	Filled	Actual
1	Laboratory Assistant	0	0	0
2	Clerk (office)	1	1	3
3	Laboratory Attendant	0	0	0
4	Peon	1	1	1
5	Other(Professional Assistant)	1	1	1

**18. Thrust areas of research as identified by the department:**

- a. Topology
- b. Graph Theory
- c. Operator Theory, Functional Analysis
- d. Algebra
- e. Algebraic Topology

**19. Information about research grants, projects completed and ongoing during the period of last 4 years**

a) From National funding agencies (like UGC, CSIR, DST, DBT etc): nil

b) From International funding agencies: nil

**20. Funds received at Departmental level through DST-FIST; CSIR, UGC-SAP/CAS, DAE, DBT, BRNS, ICSSR, AICTE, etc : nil**

**21. Research facilities available in the department and recognition received, if any?**

- > 24 Scholars were doing Ph.D under the guidance of 5 Research Guides, in the Department during this period, and awarded **13** PhDs.
- > Provided internet connection both LAN and Wi-fi (free) to each student and staff
- > Computer lab facility with 20(Latex installed) table top systems, with LAN connection
- > Faculty is encouraged to undertake sponsored projects from external funding agencies.

- Seed money is provided to the young teachers to work out research and development activities in their respective specializations.
- Research students who are not eligible for any other fellowship from external agencies are given university scholarship.
- Students are encouraged to do their project with other institutes and with other departments in the university.
- Faculty and students are encouraged to participate in national/international conferences posted by reputed Mathematical institutes and encourage students to publish papers in reputed journals.
- Library is one of the most lively unit in the department with around 9000 books, journals and back volumes, that enables learning and advancement in knowledge. It has been methodologically developed the collection of books and journals right from inception. It is rich in collections of textbooks, references and journals. Facilitate to subscribe e-journals and these journals can be accessed by any member of the department at any place. It is completely automated, which enables library users to search the books database by titles, author and publication etc. Apart from the grant from state and University, NBHM also provides library grants 6 lakhs to 9 lakhs every year for buying books, journals and infrastructure to library.
- Teachers without PhD are encouraged to pursue and complete their PhD by providing study leave with salary benefits.
- The eligible faculty are encouraged to guide PhD research scholars in accordance with PhD regulations of the university.
- In order to strengthen the research activities, the department has made collaboration based on MoU with KSoM, Kozhikode. And started to enhance the collaboration with leading institutes in India and abroad.
- Plagiarism check is another important focus that the university insists for. All the PhD thesis for submission must be checked for plagiarism and certificate to be submitted with signature of both research scholar and concerned research guide.

**22. Special research laboratories sponsored by / created by industry or corporate bodies:**  
nil

**23. Publications:**

Sl. No	Papers published in peer reviewed journals	Monographs Books, Chapters in books	Citations	h-index	Impact factor range/ Average Impact factor
1	Sini P. : Group of L-homeomorphisms and $L_r$ -representability of permutation groups. Fuzzy information and Engineering (2020) Vol.12, No.1, 97-108. ISSN :1616-8658, 1616-8666, <a href="https://doi.org/10.1080/16168658.2020.179816">https://doi.org/10.1080/16168658.2020.179816</a> .				
2	Sini P. : Completely homogeneous c-spaces; Heliyon, 2020				
3	Kavitha T and Sini P.: c-representability of Permutation Groups ; Malaya Journal of Matematik; Malaya Journal of Matematik; 2020				
4	Sini P.: Hereditary Homogeneous Generalized Topological Space; Iranian Journal of Mathematics and informatics; 2019				
5	Sini P.: The Group of Homeomorphisms and the Cyclic group of Permutation; Palestine Journal of Mathematics; 2019				
6	Sini P.: t-representability of Maximal Subgroups of the Symmetric Groups; Journal of Advanced Studies in Topology				
7	Kavitha T., Sini P. and Ramachandran P. T. : On the Group of Closure Isomorphisms, Journal of Advanced Studies in Topology, 7(3)132-136 (2016),ISSN 2090-388X , 2090-8288.				
8	Sini P., Dhanya P. M. and Ramachandran P. T. : On Completely Homogeneous L-topological Spaces, Annals of fuzzy mathematics and informatics, 12(5), 703-718(2016) ISBN- 2093-9310, eISSN-2287- 6235.				
9	Kavitha T, Kunheenkutty, P.T.Ramachandran: Upper neighbours of Čech closure operators; Arabian Journal of mathematics; 2018				
10	A.K.Sruthi, P.T. Ramachandran: On c- spaces and hypergraphs; Far East Journal of Mathematical Sciences; 2019				
11	Chithra K.P, Dr.Raji Pilakkat: Strength of Cartesian product of certain fuzzy graphs; Palestine Journal of Mathematics; 2017				
12	Chithra K.P, Dr.Raji Pilakkat; Algorithm for finding strength of fuzzy graphs; Bulletin of KMA, Vol 5, No 2(2017) 91-96; 2017				
13	Chithra K.P, Dr.Raji Pilakkat: Strength of tensor product of certain fuzzy graphs; International Journal of Applied Mathematics; 2017				

14	Jalsiya M.P. and Raji Pilakkat : Cycle tracking polynomial of a graph; Journal of Applied Science and Computations; 2019				
15	Jalsiya M.P. and Raji Pilakkat: Independent tracking polynomial of a graph; Malaya Journal of Matematik; 2019				
16	Jalsiya M.P. and Raji Pilakkat: Transitively tracked graphs; Malaya Journal of Matematik; 2019				
17	Jalsiya M.P., Raji Pilakkat: Track closure space generated by a graph; International Journal of Research and Analytical Reviews; 2019				
18	Jalsiya M.P. and Raji Pilakkat: Independent and Irredundant Cycle Tracking Sets of a Graph : An efficient approach to electrical circuit analysis; Far East Journal of Mathematical Sciences; 2019				
19	Jalsiya M.P. and Raji Pilakkat: International Journal of Research in Advent Technology; 2018				
20	Jalsiya M.P. and Raji Pilakkat: Total cycle tracking sets; Far East Journal of Mathematical Sciences; 2019				
21	K. M. Reshmi and Raji Pilakkat: Transit index of a graph and its correlation with MON of octane isomers; Advances in Mathematics: Scientific Journal; 2020				
22	K. M. Reshmi and Raji Pilakkat: Transit index of various graph classes; Malaya Journal of Matematik; 2020				
23	Seena V, Raji Pilakkat: T1 Hypergraphs; Global Journal of Pure and Applied Mathematics; 2017				
24	Seena V, Raji Pilakkat: T0 Hypergraphs; Global Journal of Pure and Applied Mathematics; 2017				
25	Seena V, Raji Pilakkat: Hausdorff Hypergraphs; Bulletin of Kerala Mathematical Association; 2017				
26	Jisna P, Raji Pilakkat: Neighborhood Sigma Algebras of Middle graph, Total graph and Join of Two Graphs; Global Journal of Pure and Applied Mathematics; 2017				
27	Jisna P, Raji Pilakkat: Measurable Signed Dominating Functions; Bulletin of Kerala Mathematics Association; 2017				
28	Jisna P, Raji Pilakkat: Neighborhood sigma algebra of graph products; International Electronic Journal of Pure and Applied Mathematics; 2018				
29	Jisna P, Raji Pilakkat: Sections of measurable functions; Far East Journal of Mathematical Sciences ; 2018				

30	Annie Sabitha Paul and Raji Pilakkat: A note on T0 domination; Inter- national Journal of Research in Advent Technology; 2019				
31	Annie Sabitha Paul and Raji Pilakkat: On cycle neighbor equivalence and cycle neighbor roots of a graph; Malaya Journal of Matematik; 2020				
32	Annie Sabitha Paul and Raji Pilakkat: Modified cycle neighbor polyno-mial of graphs; Advances in Mathematics Scientific Journal; 2020				
33	Annie Sabitha Paul and Raji Pilakkat: Cycle neighbor polynomial of some graph operations; Malaya Journal of Matematik				
34	Annie Sabitha Paul and Raji Pilakkat: Cycle neighbor polynomial of graphs; Communications in Mathematics and Applications; 2020				
35	Dr.Anil Kumar.V.: On Global Bipartite Domination Polynomials; ISSN 0973-1768; 2017				
36	Dr.Anil Kumar.V.: ON TOTAL DOMINATION POLYNOMIALS; Far East Journal of Mathematical Sciences; 2017				
37	Dr.Anil Kumar.V.: On a class of V4 -barycentric magic graphs; Far East Journal of Mathematical Sciences; 2017				
38	Dr.Anil Kumar.V.: Cayley fuzzy grahs, induced by loops; Far East Journal of Mathematical Sciences; 2017				
39	Dr.Anil Kumar.V.: CNP-EQUIVALENT CLASSES OF GRAPHS; South East Asian Journal of Mathematics and Mathematical Sciences; 2017				
40	Dr.Anil Kumar.V.: Common neighbor polynomial of graph operations; Far East Journal of Mathematical Sciences; 2017				
41	Dr.Anil Kumar.V.: Cayley Bipolar Fuzzy Graphs Induced By Loops; Global Journal of Pure and Applied Mathematics;				



42	Dr.Anil Kumar.V.: Common neighbor polynomial of graphs; Far East Journal of Mathematical Sciences; 2017				
43	Dr.Anil Kumar.V.: On the Stability of Common Neighbor Polynomial of Some Graphs; South East Asian Journal of Mathematics and Mathematical Sciences; 2018				
44	Dr.Anil Kumar.V.: The Common Neighbor Polynomial of Some Graph Constructions; International Journal of Research in Advent Technology; 2019				
45	Dr.Anil Kumar.V.: On the real roots of common Neighbor polynomial of graphs; Journal of Applied Science and Computations; 2019				
46	Dr.Anil Kumar.V. Star Magic Labeling of Some Graphs; Far East Journal of Mathematical Sciences; 2019				
47	Dr.Anil Kumar.V.: Neighbourhood V4- Magic labeling of Star and Path related graphs; Journal of Discrete Mathematical Sciences & Cryptography; 2019				
48	Dr.Anil Kumar.V. Neighbourhood V4- Magic labeling of Some cycle related graphs; Far East Journal of Mathematical Sciences; 2019				
49	Dr.Anil Kumar.V.: Neighbourhood V4- Magic labeling of Some Splitting graphs; International Journal of Research in Advent Technology; 2019				
50	Dr.Anil Kumar.V.: Neighbourhood barycentric V4- Magic labeling of Some graphs; International Journal of Research and Analytical Reviews				
51	Dr.Anil Kumar.V.: Generalized Common Neighbour Polynomial of Graphs; International Journal of Mathematical Combinations; 2019				
52	Dr.Anil Kumar.V.: Neighbourhood V4- Magic labeling of Some Shadow graphs; International Journal of Mathematical Combinations				

53	K. P. Vineesh and V. Anil Kumar: Neighbourhood V <sub>4</sub> -magic labeling of some middle graphs; Malaya Journal of Matematik; 2020				
54	Neethu K.T. and Anil Kumar V.: Cayley Fuzzy Digraph Structure Induced by Groups; International Journal of Mathematical Combinatorics; 2020				
55	Shikhi M. and Anil Kumar V.: Common neighbor polynomial of some special trees; Aegaeum Journal; 2020				
56	Shikhi M. and Anil Kumar V.: Common neighbor polynomial of graphs and its significance in network data clustering; Journal of Xidian University; 2020				
57	Libeesh Kumar K.B and Anil Kumar V.: Induced V <sub>4</sub> magic labelings of cycle related graphs; Malaya Journal of Matematik; 2020				
58	Libeesh Kumar K.B and Anil Kumar V.: Induced magic labelings of some graphs; Malaya Journal of Matematik; 2020				
59	Priya K. and Anil Kumar V.: Edge cut polynomials of graphs; Advances and applications of discrete mathematics; 2020				
60	Libeesh Kumar K.B and Anil Kumar V.: Induced V <sub>4</sub> - Magic Labeling of Some Star and Path Related Graphs; South East Asian Journal of Mathematics and Mathematical Sciences; 2020				
61	K P Vineesh and V Anilkumar: Neighbourhood - magic labeling of some middle graphs; Malaya Journal of Matematik; 2020				
62	K P Vineesh and V Anilkumar: Neighbourhood - magic labeling of some subdivision graphs; Malaya Journal of Matematik; 2020				
63	Preethi Kuttipulackal and Rafia Yoosuf: Cube Harmonius Labeling; Memes-Interdisciplinary Science Journal, Vol 1(1); 2017				
64	Preethi Kuttipulackal and Rafia Yoosuf: The Mixed Tree Domination Polynomial; Contemporary Studies in Discrete Mathematics; 2018				

65	Rafia Yusuf and preethi Kuttipulackal: Domination in Hypergraphs; Singularities- A Transdisciplinary biannual Research Journal; 2018				
66	Rafia Yoosuf and Preethi Kuttipulackal: Tree domination polynomial of some graphs; Malaya Journal of Matematik; 2019				
67	Rafia Yoosuf and Preethi Kuttipulackal: The Mixed Tree Domination Polynomial of Some Derived Graphs; International Journal of Research in Advent Technology; 2019				
68	Rafia Yoosuf and Preethi Kuttipulackal: The Mixed Tree Domination Polynomial of Some Path Related Graphs; International Journal of Applied Engineering Research; 2019				
69	Rafia Yoosuf and Preethi Kuttipulackal: A study of mixed tree domination polynomials in some class of graphs; South East Asian J. of Mathematics and Mathematical Sciences; 2019				

**24. Details of patents filed & granted and income generated: nil**

**25. Consultancy services provided, name of the teacher/s and income generated: nil**

**26. Details of teachers invited as resource persons for Refresher courses, Orientation courses, Seminars, Workshops, Conferences at national and international levels.**

Preethi Kuttipulackal

1. National Seminar on "Anantham Viswathomugham – Glimpses of Vedic Mathematics" Organized by Bharatheeya Vidyanikethan College of Teacher Education, Kallekkad, Palakkad, 28<sup>th</sup> -29<sup>th</sup> Feb.2020 ; Keynote speaker; on 28<sup>th</sup>.
2. UGC sponsored "Refresher Course in Mathematical Science"(9.12.2019-21.12.2019)" conducted by the HRDC, University of Calicut; Chaired a session and adjudicated the Seminar Paper presentations of Participants on 17.12.2019.
3. UGC sponsored "Refresher Course in Mathematical Science"(9.12.2019-21.12.2019)" conducted by the HRDC, University of Calicut; Resource Person on 17.12.2019.
4. Workshop for I MSc. Mathematics Students, prior to the Internship Programme; organized by the Department of mathematics, University of Calicut. During 2<sup>nd</sup> to 6<sup>th</sup> December 2019; Resource Person and Organizer

5. "Two Day Foundation School in Mathematics for undergraduates"(27.11.2019-28.11.2019) sponsored by KSCSTE, Govt. of Kerala organized by Kerala School of Mathematics(KSOM) in association with T.M. Govt. College, Thirur; Resource person
6. "MESMAC International Conference on People First? Man, Machine, Milieu" orgnized by MES Mampad College(Autonomous) in Association with Kerala State Higher Education Council on 15, 16 & 17 Jan 2019; Chaired a session
7. "Graphics" Two Day National Seminar(5<sup>th</sup> & 7<sup>th</sup> November 2018) on Linear Programming organized by the Department of Mathematics, M.A.M.O. College, Mukkom, 7<sup>th</sup> November 2018; Resourse Person
8. "MESMAC International Conference on Ecologies of the New: matter, Mind & Body" orgnized by MES Mampad College(Autonomous) on 9, 10 & 11 Jan 2018; Resource Person

#### Raji Pilakkat

1. UGC sponsored "Refresher Course in Mathematical Science"(9.12.2019-21.12.2019)" conducted by the HRDC, University of Calicut; Chaired a session and adjudicated the Seminar Paper presentations of Participants on 17.12.2019.
2. UGC sponsored "Refresher Course in Mathematical Science"(9.12.2019-21.12.2019)" conducted by the HRDC, University of Calicut; Resource Person on 17.12.2019.
3. Workshop for I MSc. Mathematics Students, prior to the Internship Programme; organized by the Department of mathematics, University of Calicut. During 2<sup>nd</sup> to 6<sup>th</sup> December 2019; Resource Person
4. "Two Day Foundation School in Mathematics for undergraduates" (27.11.2019-28.11.2019) sponsored by KSCSTE, Govt. of Kerala organized by Kerala School of Mathematics(KSOM) in association with Govt. Arts College, Meenchantha; Resource person
5. UGC sponsored "Refresher Course in Mathematical Science"(9.12.2019-21.12.2019)" conducted by the HRDC, University of Calicut; Resource Person on 17.12.2019.
6. Workshop for I MSc. Mathematics Students, prior to the Internship Programme; organized by the Department of mathematics, University of Calicut. During 2<sup>nd</sup> to 6<sup>th</sup> December 2019; Resource Person
7. "Two Day Foundation School in Mathematics for undergraduates" (27.11.2019-28.11.2019) sponsored by KSCSTE, Govt. of Kerala organized by Kerala School of Mathematics(KSOM) in association with Govt. Arts College, Meenchantha; Resource person

#### Anil Kumar V.

1. UGC sponsored "Refresher Course in. Basic Science, 2018, Resource person
2. UGC sponsored "Refresher Course in Mathematics and Statistics, 2019, Resource person

3. Workshop for I MSc. Mathematics Students, prior to the Internship Programme; organized by the Department of mathematics, University of Calicut. During 2<sup>nd</sup> to 6<sup>th</sup> December 2019; Resource Person

Sini P.

1. National Seminar on Topology and analysis on 8<sup>th</sup>,9<sup>th</sup> May 2019 organized by the Alumni of Department of mathematics, University of Calicut-coordinated, attended and delivered an invited Talk.
- 2.
3. UGC sponsored Orientation Programme conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 06-03-2018.
4. UGC sponsored Orientation Programme conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 13-07-2018.
5. UGC sponsored Refresher course in Mathematics and Statistics conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 25-07-2018.
6. UGC sponsored Refresher course in Gender Studies conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 15-10-2018.
7. Third induction Programme from 07-01-2021 to 06-02-2021 conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 5-02-2021.
8. Fourth induction Programme from 07-03-2021 to 26-03-2021 conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 25-03-2021.

Ramachandran P.T.

1. UGC sponsored "Refresher Course in. Basic Science, 2018, Resource person
2. UGC sponsored "Refresher Course in Mathematics and Statistics, 2019, Resource person
3. National Seminar on "Recent Trends in Topology"; organized by the Department of Mathematics, University of Calicut, on 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> Feb, 2019; Participated
4. Bridge Course for I Year MSc Students conducted by the Department of Mathematics, University of Calicut during the period of August to October 2017; Coordinated

Mubeena T.

1. Two week training course in Algebra-I in [KSoM- Talent Nurture Program, 6-18 May, 2019](#), 12 classes given.

2. One talk on “Introduction to Geometric Group Theory” on 25<sup>st</sup> January 2020 at St. Joseph’s College Devagiri, Calicut in the National Seminar on Topology and its Applications held during 23-25, Jan. 2020.
3. A talk on “The Model Spaces of Riemannian Geometry” on 17<sup>th</sup> December 2019 in UGC sponsored 11<sup>th</sup> Refresher Course in Mathematical Sciences from 09-21, December 2019, at UGC-HRDC, Calicut University.
4. One talk on “Twisted Conjugacy and Quasi-isometric Rigidity of irreducible lattices in Semisimple Lie groups” on 28<sup>th</sup> May 2019 in the National Conference on Topology, Geometry and Related Topics at The Institute of Mathematical Sciences, Chennai.
5. Two talks on “Plane Geometries” on Dec 13, 2019 at the National seminar on “Glimpses of Analysis” at Govt. College, Malayinkeezhu, Trivandrum held during 12-13, December 2019.
6. Two talks on Galois Theory in [The Academic Enrichment Programme at PRNSS College Mattannur](#) on Feb. 22, 2019
7. Three talks on “Surface Theory” in the [National Workshop on Glimpses of Differential Geometry](#), on Jan. 31 and Feb. 1, 2019 at Central University of Kerala held during 30, 31 Jan, 1,2 Feb 2019.
8. Two talks on “Separation and countability Axioms, Connectedness and Compactness” in the National Seminar on Topology and its Applications at Govt. College Mokeri on Nov. 2, 2018, held during 1,2 November 2018.
9. One talk on 24<sup>th</sup>, March 2017 on ‘Hyperbolic Groups’ in the National Seminar on Topology and Its Applications’ at Department of mathematics, University of Calicut, During 23-25 March 2017.

**27. Details of teachers participated in Refresher courses, Orientation courses, Seminars, Workshops, Conferences at national and international levels.(participant, presented paper, chaired the session)**

Preethi Kuttipulackal

1. NAAC webinar(National) on “Governance and leadership”-a Webex event. Topic: Governance and Leadership Host: Samuel Lourdraj C, System Analyst Monday, May 17, 2021 3:00 pm, India Time (Mumbai, GMT+05:30) Event number: 182 816 6609 Event password: 1234, attended
2. “National Webinar on India, Mathematics and Ramanujan” organized by Department of Mathematics, 22,23,24 Feb 2021, Coordinator

3. “Virtual National Workshop on Topology in honour of Prof. Ramachandran P.T.” organized by Department of Mathematics, 22,23,24 Feb 2021,14.02.2021-20.02.2021, participated
4. National level Online FDP- Technology integration in Higher Education, organized by MHRD TLC, University of Calicut, during 5<sup>th</sup> Jan to 11<sup>th</sup> Jan 2021, attended and successfully completed
5. National Mathematical day webinar organized by NAAC, on 22<sup>nd</sup> Dec. 2020, attended, attended
6. Ramanujan Yatra-A discourse by Prof. Manjul Bhargava (International level) jointly organized by India Science, KSOM, RMS,... on 22<sup>nd</sup> Dec. 2020, attended
7. National level Online Short Term Training Programme on “Matlab and Mathematica for Scientific Research” organized by Department of Mathematics, Arul Anandar College (Autonomous), Karumathur, during 27<sup>th</sup> July to 29<sup>th</sup> July 2020; Attended and successfully completed
8. National Webinar on Effective Online Teaching in the Covid-Era (PKM Collega of Education, Kannur in Collaboration with the Department), 15.07.2020
9. “Online Hands on Training Programme on Learning Management System-Moodle” Jointly organized by Department of Computer Science and IQAC, University of Calicut, during 25<sup>th</sup> May to 9<sup>th</sup> June 2020; Attended and successfully completed
10. “National Seminar on Topology and analysis” organized by the Alumni of Department of mathematics, University of Calicut. on 8<sup>th</sup>,9<sup>th</sup> May 2019; Participated
11. Popular Lecture by Dr. Ramachandran P.T. in connection with Pi-Day Celebrations of the Department of mathematics, University of Calicut. on 14<sup>th</sup> March 2019; Participated
12. National Seminar on “Recent Trends in Topology”; organized by the Department of Mathematics, University of Calicut, on 7<sup>th</sup>, 8<sup>th</sup>and 9<sup>th</sup> Feb, 2019; Participated
13. “Two Day National Seminar on Recent Trends in Mathematical Analysis” organized by PG Department of Mathematics, T.M. Govt. College, Thirur, Sponsored by Directorate of Collegiate Education, Govt. of Kerala, on 11<sup>th</sup> & 12<sup>th</sup> October 2018; Participated
14. Workshop on” SWAYAM PRABHA DTH Channel”morganized by the Educational Multimedia Research Centre(EMMRC), University of Calicut on 5<sup>th</sup> October 2018; Participated
15. “Ramanujan Seminar” organized by the Department of Mathematics, University of Calicut 15.09. 2018; Participated
16. UGC sponsored “Refresher Course in Mathematics and Statistics” conducted by the HRDC, University of Calicut from 19.07.2018 to 08.08.2018; Coordinated

17. "29<sup>th</sup> Dr. P. Kesava Menon Memorial Lectures", organized by the Department of Mathematics, in connection with the Golden jubilee celebrations of the University of Calicut on 15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> March 2018; Coordinated
18. UGC sponsored "Refresher Course in Basic Sciences(Interdisciplinary)" conducted by the HRDC, University of Calicut from 15.06.2017 to 05.07.2017; Coordinated
19. "One Day workshop on Mathematica", organized by the Department of Physics, University of Calicut in Collaboration with Wolfram Research Inc., USA, and UGC-HRDC, University of Calicut on 20.06 2017; Participated

#### **Raji Pilakkat**

1. "National Webinar on India, Mathematics and Ramanujan" organized by Department of Mathematics, 22, 23, 24 Feb 2021 attended
2. "Virtual National Workshop on Topology in honour of Prof. Ramachandran P.T." organized by Department of Mathematics, 22,23,24 Feb 2021,14.02.2021-20.02.2021, participated
3. Online Hands on Training Programme on Learning Management System-Moodle" Jointly organized by Department of Computer Science and IQAC, University of Calicut, during 25<sup>th</sup> May to 9<sup>th</sup> June 2020; Attended
4. UGC sponsored "Refresher Course in Mathematical Science"(9.12.2019-21.12.2019)" conducted by the HRDC, University of Calicut; Chaired a session and adjudicated the Seminar Paper presentations of Participants on 17.12.2019.
5. "National Seminar on Topology and analysis" organized by the Alumni of Department of mathematics, University of Calicut. on 8<sup>th</sup>,9<sup>th</sup> May 2019; Participated
6. National Seminar on "Recent Trends in Topology"; organized by the Department of Mathematics, University of Calicut, on 7<sup>th</sup>, 8<sup>th</sup>and 9<sup>th</sup> Feb, 2019; Participated
7. "Ramanujan Seminar" organized by the Department of Mathematics, University of Calicut 15.09. 2018; Participated
8. "29<sup>th</sup> Dr. P. Kesava Menon Memorial Lectures", organized by the Department of Mathematics, in connection with the Golden jubilee celebrations of the University of Calicut on 15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> March 2018; Participated
9. "National Seminar on Topology and its Applications", organized by the Department of Mathematics, University of Calicut on 23-25 March 2017; Participated.

#### **Anil Kumar V.**

1. "National Webinar on India, Mathematics and Ramanujan" organized by Department of Mathematics, 22,23,24 Feb 2021, Coordinator



2. "Virtual National Workshop on Topology in honour of Prof. Ramachandran P.T." organized by Department of Mathematics, 22,23,24 Feb 2021,14.02.2021-20.02.2021, participated
3. Online Hands on Training Programme on Learning Management System-Moodle" Jointly organized by Department of Computer Science and IQAC, University of Calicut, during 25<sup>th</sup> May to 9<sup>th</sup> June 2020; Attended and successfully completed
4. "National Seminar on Topology and analysis" organized by the Alumni of Department of mathematics, University of Calicut. on 8<sup>th</sup>,9<sup>th</sup> May 2019; Participated
5. National Seminar on "Recent Trends in Topology"; organized by the Department of Mathematics, University of Calicut, on 7<sup>th</sup>, 8<sup>th</sup>and 9<sup>th</sup> Feb, 2019; Participated
6. "Ramanujan Seminar" organized by the Department of Mathematics, University of Calicut 15.09. 2018; Participated
7. "29<sup>th</sup> Dr. P. Kesava Menon Memorial Lectures", organized by the Department of Mathematics, in connection with the Golden jubilee celebrations of the University of Calicut on 15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> March 2018; Participated
8. "National Seminar on Topology and its Applications", organized by the Department of Mathematics, University of Calicut on 23-25 March 2017; Participated.

Sini P.

1. "National Webinar on India, Mathematics and Ramanujan" organized by Department of Mathematics, 22,23,24 Feb 2021, Coordinator
2. "Virtual National Workshop on Topology in honour of Prof. Ramachandran P.T." organized by Department of Mathematics, 22,23,24 Feb 2021,14.02.2021-20.02.2021, participated
3. National Seminar on Topology and analysis on 8<sup>th</sup>,9<sup>th</sup> May 2019 organized by the Alumni of Department of mathematics, University of Calicut.
4. National Seminar on Recent Trends in Topology held at Department of Mathematics, University of Calicut from 07-02-2019 to 09-02-2019-coordinated and participated.
5. MESMAC International Conference on Applying Theory:Paradigms, Practices Faultlines on 14-01-2020 to 16-01-2020 at MES Mampad College, Malappuram.
6. International Conference on Mathematical Modeling and Computational Methods in Science and Engineering from 22-01-2020 to 24-01-2020 at Alagappa University. Presented paper
7. International Workshop and Conference on Topology and Applications from December 5th to 11th ,2018 at Ragagiri School of Engineering and Technology. Presented paper
8. International conference on Advances in Applicable Mathematics on 07th and 08th December 2017 at Bharathiyar University.

9. Refresher Course for college Teachers-I on Commutative algebra held at Kerala School of Mathematics from 09 to 12 August 2018.
10. Two days national Seminar on Recent Trends in Mathematics held at Govt. College Madappally from 30-10-2018 to 31-10-2018.
11. Ramanujan Seminar held at Department of Mathematics, University of Calicut on 15<sup>th</sup> September 2018.
12. One day Seminar Ganithayanam conducted by Ganithakalppam group and RDMCA Kozhikkode on at St. Joseph Anglo Indian HSS, Kozhikkode on 14<sup>th</sup> July 2018.
13. Two day Workshop on Revised Accreditation Framework of NAAC and Quality Systems in Higher Education organised by IQAC, University Calicut on 5<sup>th</sup> March 2019.
14. National Seminar on "Recent Trends in Topology" held at Department of Mathematics, University of Calicut from 07-02-2019 to 09-02-2019.
15. 29<sup>th</sup> Dr. P Kesava Menon Memorial Lectures held at Department of Mathematics, University of Calicut from 15<sup>th</sup> to 17<sup>th</sup> March 2018.
16. Workshop on "India, Women and Mathematics- Research and Opportunities" held at Department of Mathematics, CUSAT, Cochin-22 from 2<sup>nd</sup> to 3<sup>rd</sup> January 2018.
17. Online workshop on "Application of Geogebra" from 7<sup>th</sup> to 12<sup>th</sup> September 2020 organized by Pillai College of Engineering, New Panvel.
18. International conference on Advances in Applicable Mathematics on 07th and 08th December 2017 at Bharathiyar University. Presented paper
19. Refresher Course in Mathematical Science conducted by UGC\_HRDC, University of Calicut from 09-12-2019 to 21-12-2019.
20. NPTEL- AICTE- FDP (August to October 2019) for one week in Introduction to Abstract Group Theory
21. NPTEL- AICTE- FDP (August to October 2019) for one week in Introduction to Rings and fields.
22. Summer workshop for MSc students and College teachers held at Kerala School of Mathematics from 01 to 21 April 2017.
23. NPTEL- AICTE- FDP (September to November 2020) for one week in Introduction to Abstract and Linear Algebra.
24. One week international e-faculty development programme on Fixed Point Theory and its Applications organized by Department of Mathematics, Manipal University, Jaipur September 15<sup>th</sup> to 19<sup>th</sup> 2020.

Ramachandran P.T.

1. National Seminar on "Recent Trends in Topology"; organized by the Department of Mathematics, University of Calicut, on 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> Feb, 2019; Participated

2. 29<sup>th</sup> Dr. P. Kesava Menon Memorial Lectures, organized by the Department of Mathematics, in connection with the Golden jubilee celebrations of the University of Calicut on 15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> March 2018; Coordinated
3. Bridge Course for I Year MSc Students conducted by the Department of Mathematics, University of Calicut during the period of August to October 2017; Coordinated
4. Career Guidance Programme organized by the Department of Mathematics and UGC Career and Councelling Cell, University Employment Information & Guidance bureau, University of Calicut on 28<sup>th</sup> March 2017

Prasad T.

1. “National Webinar on India, Mathematics and Ramanujan” organized by Department of Mathematics, 22,23,24 Feb 2021, participated
2. “Virtual National Workshop on Topology in honour of Prof. Ramachandran P.T.” organized by Department of Mathematics, 22,23,24 Feb 2021,14.02.2021-20.02.2021, participated

Mubeena T.

1. “National Webinar on India, Mathematics and Ramanujan” organized by Department of Mathematics, 22,23,24 Feb 2021, participated
2. “Virtual National Workshop on Topology in honour of Prof. Ramachandran P.T.” organized by Department of Mathematics, 22,23,24 Feb 2021,14.02.2021-20.02.2021, participated
3. Refresher course on Semisimple Algebra at Kerala School of Mathematics, Calicut during 4-7 January 2018.
4. Refresher course on Group representation during 14- 17 September 2017 at Kerala School of Mathematics, Calicut
5. (Refresher Course: 21 days) Special Winter School in Computational Mathematics for College/University Teachers under the Academic Staff Orientation Scheme of UGC, Savitri Bai Phule Pune University, 06-26, November 2017
6. (Orientation course : 28 Days) Orientation Course for College/University Teachers under the Academic Staff Orientation Scheme of UGC, Academic Staff College, University of Calicut, Aug. 11-Sep 07, 2016.

**28. Participation of teachers in various academic activities as members of committees at University level, State level, National level, International level bodies. (give details)**

- Contributed to the academic activities of the University as

Faculty members are actively involved in:

- Providing research guidance, to the students of the Department and various other research centres
- Research activities of various Research centres as RAC member
- curriculum designing and revision for MSc., MPhil, and PhD programmes in Mathematics, as a board member, PG Board of Studies in Mathematics in the University of Calicut and other Autonomous Colleges.
- Evaluation process of various Universities as a Board member of MSc/MPhil/PhD Examinations
- Academic and administrative activities of the School of Distance Education(SDE), of the University of Calicut as Board member, CIQA(Centre for Internal quality assurance)of SDE, prepared self Learning material for MSc Mathematics programme of the School of Distance Education(SDE), University of Calicut
- Coordinating Various programmes in the Department and University-National/International and regional seminars, workshops, Career Guidance programmes, Training programmes, etc.
- Coordination of the Refresher Courses and Orientation Courses conducting the MHRD Centre(ASC) of Calicut University
- As Resource person for refresher courses, conducted by UGC-HRDC, Calicut University; for various international, national and regional seminars, workshops, nurture programmes, etc. conducted by various Colleges and institutes

■ Contributed to the administrative activities of the University as

- Members of various boards of University- PG Board of studies; Syllabus & Curriculum designing Board; Panel of experts in various activities of the University and other Institutes;IQAC (Internal quality assurance cell); CIQA(Centre for Internal quality assurance), SDE;
- Members of various committees of University- CSIF committee; CCSS Committee; Grievance committees; Library Committee; NAAC Criterion wise committees; Purchase committees of various Departments;
- Holding various charges of the Department - HoD, Department Council Secretary, PTA secretary,
- Subject expert of various selection committees for appointing Assistant Professor in Mathematics in various centres
- Polling /counting official for DSU election every year

29. **Details of teachers appointed/nominated on Editorial Boards at university, state, national and international levels.** nil

30. **Awards / Prizes and recognitions received by teachers at university, state, national and international level:** nil

31. **Awards and Prizes received by students at university, state, national and international level:**

- **Subith G. (MSc 2018-20):** Rev. Fr. Thomas Moothedan Endowment Cash award for the top scorer in all MSc Mathematics Programmes offered by the University, for the year 2019-2020
- **Subith G. (MSc 2018-20):** Cash award for the top scorer in MSc Mathematics Programme offered by the Department of Mathematics, University, for the year 2019-2020
- **Haripriya K.T.(MSc 2019-21):** Gold medal for Inter-University Individual Kalari, 2019
- **Dilshana (MSc 2017-19):** Cash award for the top scorer in MSc Mathematics Programme offered by the Department of Mathematics, University, for the year 2018-2019
- **Gokul Das (MSc 2016-18):** Cash award for the top scorer in MSc Mathematics Programme offered by the Department of Mathematics, University, for the year 2017-2018

32. **Details of Seminars/ Conferences/Workshops organized at university, state, national and international level and the source of funding with details:**

<b>Name of Conference/Seminars / Workshops</b>	<b>Funding agency</b>	<b>No. of Participants</b>	<b>University/ State/ National/ International</b>	<b>Dates</b>
Bridge Course for MSc Students-2017	University	41	University	23.08.2017, 22.09.2017 03.10.2017, 11.10.2017
Lectur series on Linear Algebra by Prof: Krishnskumr V., INSA Teacher Award Winner 2016	INSA	60	University	25.11.2017, 6.12.2017, 06.01.2018
Popular Talk – Introduction to numbers	No funding	40	State	7.03.2018
Popular Talk – Calendar	No funding	44	State	08.03.2018
Popular Talk – Mathematical Modeling	No funding	31	State	09.03.2018
Pie Day Celebrations	No funding	47	University	14.03.2018

29 <sup>th</sup> Dr. P. Kesavamenon Memorial Lecture Series	Dr. P. Kesava Menon endowment fund	72	National	15.03.2018, 17.03.2018
History of Mathematics in India	No funding	40	State	18.04.2018, 25.04.2018 02.05.2018, 09.05.2018 16.05.2018, 23.05.2018 23.06.2018
Bridge Course for MSc Students-2018	University	55	University	23.07.2018, 31.07.2018 01.08.2018, 02.08.2018 12.09.2018, 13.09.2018 28.09.2018
Ramanujan Seminar	State	112	State	15.09.2018
National Seminar on Recent Trends in Topology	University	180	National	07.02.2019, 09.02.2019
Seminar on Complex Analysis	University	44	University	22.02.2019
Pi day Celebration	No funding	27	University	14.03.2019
Seminar on Partial Differential Equations	University	39	State	18.03.2019, 21.03.2019
National Seminar on Topology and Analysis	Alumni	45	National	08.05.2019, 09.05.2019
Bridge Course for MSc Students-2019	University	40	University	19.06.2019
Awareness programme on Clean and Healthy Campus	No funding	55	University	05.08.2019
Internship Based Workshop for MSc Students	No funding	32	State	02.12.2019-06.12.2019
National Seminar on Analysis and Geometry	University	38	National	06.03.2020- 07.03.2020
National Webinar on Effective Online Teaching in the Covid-Era (PKM College of Education, Kannur in Collaboration with the Department)	PKM College		National	15.07.2020

Bridge Course for MSc Students-2020	University	40	University	24.11.2020, 27.11.2020 07.12.2020, 08.12.2020 10.12.2020, 19.12.2020 07.01.2021, 08.01.2021 09.01.2021, 17.01.2021
Virtual National Workshop on Topology in honour of Prof. Ramachandran P.T.	Alumni	131	National	14.02.2021-20.02.2021
National Webinar on India, Mathematics and Ramanujan	University	126	National	22.02.2021-24.02.2021
Skill Development Programme – An Excursion in Linear Algebra	PTA	54	University level	20.05.2021-23.05.2021
Life skills for Youth Development	PTA	55	University level	28.05.2021
Career Guidance Programme- Opportunities for Mathematics Students	PTA	55	University level	29.05.2021
Guidance for NET in Mathematics- Real Analysis	PTA	54	University	29.05.2021-31.05.2021

**33. Student profile programme-wise at PG :**

PG	Applications Received	No. of students Admitted	Seats Available	Male	Female	Total	Year
MSc Mathematics	780	21	20+1	1	20		2016
MSc Mathematics	679	21	20+1	0	21		2017
MSc Mathematics	1168	21	20+1	6	15		2018
MSc Mathematics	917	21	20+1	2	19		2019
MSc Mathematics	1414	27	25+2	1	26		2020

**34. Year-wise results of students at PG:**

PG	Year	Appeared	Passed	Pass %	Grade %			
					O	A	B	C

MSc Mathematics (2015 admsn)	2016-17	21	13	62%				
MSc Mathematics (2016 admsn)	2017-18	21	12	57%				
MSc Mathematics (2017 admsn)	2018-19	20	14	70%				
MSc Mathematics (2018 admsn)	2019-20	21	16	76%				

**35. Information about M. Phil. programme:**

Year	Applications Received	No. of students admitted	Male	Female	Total
2016-2017	26	5	1	4	5
2017-2018	82	5	1	4	5
2018-2019	35	4	0	4	2 (2 discontinued)
2019-2020	58	6	2	4	6
2020-2021	85	7	0	7	7

**36. Information about Ph. D. programme :**

Year	Applications Received	No. of students admitted	Male	Female	Total
2016-2017	2	4	0	4	4
2017-2018	24	1	0	1	1
2018-2019	32	8	4	4	8
2019-2020	93	3	0	3	3
2020-2021	57	4	0	4	4

**37. Number of students awarded M.Phil., Ph.D ,Degree :**

Year	M.Phil	Ph.D.	Male	Female	Total
2016-2017	6	1	2	5	7



2017-2018	5	4	1	8	9
2018-2019	5	4	1	3	9
2019-2020	5	4	0	4	9
20120-2021	-	1 (+2 submitted)	1	0	1

**38. Diversity of Students : (Year-wise)**

Name of the Programme	Year	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
MSc Mathematics	2016-17	100	0	0	0
	2017-18	67	33	0	0
	2018-19	100	0	0	0
	2019-20	95	5	0	0
	2020-21	63	33	4	0
M.Phil. Mathematics	2016-17	80	20	0	0
	2017-18	80	20	0	0
	2018-19	0	50	50	0
	2019-20	67	33	0	0
	2020-21	71	29	0	0
Ph. D. Mathematics	2016-17	100	0	0	0
	2017-18	100	0	0	0
	2018-19	62.5	25	12.5	0
	2019-20	100	0	0	0
	2020-21	100	0	0	0

**39. Number of students cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give Category wise data.**

Year	MPSC/UPSC	NET/ SET	GATE	Other Exams	Total
2017-2018		2	-	-	2
2018-2019		6	-	1(NBHM PG Scholarship) 1(K-TET-III)	8
2019-2020		11	2	4(K-TET- III)	17

2020-2021		1	5	4(K-TET-III) 2(K-TET-II)	12
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**40. Student progression/ placement record: Number/ percentage of students proceeded for higher studies Number/percentage of students placed:**

Year	# proceeded for higher studies		# of students placed
	UG to PG	PG to Ph.D./ M.Phil	
2017-2018		13	3
2018-2019			1
2019-2020			2

**41. Diversity of Faculty:**

Teaching faculty	%
from the same university	50
from other universities within the State	16.7
from other States	33.3
from outside the country	0

**42. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. / D.Lit.:**

Number of faculty with M.Phil. qualification: 4

Number of faculty with Ph.D. qualification: 6

**43. Present details of departmental infrastructural & other facilities with regard to**

a) Central Library Books and Journals, etc, relevant to Department:

b) Departmental Library (books, journals etc.) : 9788

c) Computers and Internet facilities for staff : 4 laptops(faculty)  
3 desctop(office), 1 desctop(library)

d) Total number of class rooms : 2

e) Class rooms with ICT facility : 2

f) Students' laboratory : 1 with 20 computers with LAN facility

g) Research laboratories : nil

h) Seminar Hall : 1

i) Smart class room : 2

j) Any other facility LCDs : 1

**44. List of post-doctoral students and Research Associates**

a) Post-doctoral. students- nil

b) Research Associates- nil

**45. Number of post graduate students getting financial assistance from the university/state / central government**

(MSc & MPhil) 2016-17 : 38    2017-18 : 41    2018-19 : 32    2019-20 : 31    2020-21: 41

**46. Curricular Aspects:**

**a) Does the faculty take initiative in curriculum development process?**

Yes, regularly revise the syllabus according to the need, and for further improvement of the activities, department

- ❖ collect the feedback from students and teachers (from various other institutions too), parents and alumni
  - Do the modifications in the syllabus, curriculum, teaching methods, steam and pattern of question papers accordingly by considering and discussing their suggestions and demands

In fact, for the syllabus revision, the courses are divided among the faculties of the Department and each faculty do the modifications by discussing with students, faculty members and experts from all over the country.

- ❖ analyses the class room activities of each student and the results of continuous assessment and end semester exams in class meetings and PTA meetings
  - take necessary steps for the improvement of each student
  - find remedies for students' issues related to studies by giving revision classes, remedial classes, problem solving sessions, counselling ...

**b) Is curriculum suitable to make students globally competitive in the subject? If yes, substantiate.**

Yes. The Department offers three programmes- M.Sc., M.Phil. and Ph.D. in Mathematics. Department Council(DC) is the authority to design and revise the Curriculum. DC members are faculty members of the Department. The curriculum is designed to achieve academic excellence and to motivate the students for further studies; strictly following UGC guidelines and considering the UGC curriculaum; filtrated through the regulatory bodies- Department Council, Board of Studies and Academic council. DC takes initiative to revise the curriculum.

**c) Does the department offer program with sufficient no. of electives options.**

Yes, the list of electives includes five times the requirement

**d) While framing curriculum, is feed-back taken from stakeholder's viz. Students/Alumni/Parents/Employers considered?**

**e) What is the frequency of curriculum revision? (3/4/5 years or more):**

3 years(average) or more

**f) Does the curriculum have emerging thrust areas, including interdisciplinary areas? (If yes, elaborate).**

Yes.

**47. Teaching-Learning, Evaluation.**

**1) Number of teachers preparing & following Academic Teaching plan**

**2) How many teachers use the following teaching methods:**

**a) Interactive lecture method using blackboard, Group discussions, Problem solving, Seminars. : 100%**

**b) Use ICT methods to support lectures. : 100%**

**3) Does the Department have Peer review processes? If yes, are the suggestions effectively used to improve the teaching quality?**

**4) Does the department have any mechanism to ensure that entire syllabus is completed?**

Departmental council review the status regularly and concerned teachers take necessary steps if any kind of issues.

**5) Do you offer Bridge/Remedial courses? If yes, Give details.**

Yes. The Bridge Course, organized, since 2016, by the Department of Mathematics, University of Calicut, is a series of sessions including lectures, interaction with experts, counseling and career guidance for the students of MSc . Mathematics in the beginning of their first semester. The sessions, distributed in one or two months, will be handled by eminent Mathematicians from various Institutes in India.

The programme aims to prepare the students comfortable with the concepts in Mathematics, giving a concrete base for the fundamental ideas.

**6) What is the method for conducting internal evaluation?**

Each course of MSc, MPhil and PhD programmes has respectively 20%, 40% and 20% internal components. The internal evaluations are done based on the performance of the students in

- Class room activities
- Assignments
- Viva-voce
- Seminar presentation
- Attendance
- Test series

**48. Teacher Performance:**

**1) Whether the performance of the teacher assessed by the students? If yes, are the feedback reports analysed and suggestions communicated to teachers?**

Yes, The reports are to be placed in the Department council and a consolidated report has to be sent to IQAC. The council, if necessary, will suggest actions to be taken for improving the weak points.

**2) Number of teachers getting a) Very Good \_\_\_\_ b) Good \_\_\_\_ c) Average \_\_\_\_\_ remarks from students.**

So far, every faculty in the Department got Good/Very Good in all aspects

**3) Whether suggestion boxes are kept in the department to get suggestions from students on infrastructural facilities available in the department?**

No, But suggestions are collected through class leaders and class teachers. There were many situations the students directly communicate to the concerned teachers regarding their negatives and positives.

**4) Are the suggestions received from students used for improvement of facilities?**

Yes

**5) Do teachers submit Self-Appraisal Reports? Are these reports appraised by HOD and forwarded to the university with comments?**

Not regularly

**6) What is the individual faculty wise h index?**

**7) Give details of “beyond syllabus scholarly activities” of the department.**

- Regularly organizes programmes to train and guide students as well as teachers of Colleges and Schools.
- Each faculty member is involved in giving external lectures, formal and informal guidance to students of any institute
- Coordinates Refresher/Orientation programmes organized by HRDC, Calicut University
- Involves in Academic as well as Administrative matters as member of various boards and committees of the University and other Universities/Institutes
- Active in independent research

**49. List the distinguished alumni of the department (maximum 10)**

- Prof. Thamban Nair, IIT Madras
- Prof. Sandeep K., TIFR Bangalore(Bhatnagar award winner)
- Prof. K.T. Joseph, TIFR Mumbai
- Prof. Ratnakumar P.K., HRI Allahabad
- Prof. Nandakumaran A. K., IISc Bangalore
- Prof. Ramachandran K.M., University of South Florida
- Prof. Gopalan Nair, University of Western Australia
- Dr. Sumesh, IIT Madras

- Dr. Sarath Sasi, IIT Palakkad
- Dr. Jayanarayanan C.R., IIT Palakkad

**50. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.**

- University level online Career Guidance Programme “Guidance for NET in Mathematics- Real Analysis” organized by the Department of mathematics, University of Calicut, 29<sup>th</sup> to 31<sup>st</sup> May 2021
- University level online Career Guidance Programme “Opportunities for Mathematics Students” organized by the Department of mathematics, University of Calicut on 29<sup>th</sup> May 2021
- University level online Skill development Programme “Life skills for youth development” organized by the Department of mathematics, University of Calicut on 28<sup>th</sup> May 2021
- University level online Skill development Programme “ An excursion in Linear Algebra” organized by the Department of mathematics, University of Calicut during 20<sup>th</sup> to 23<sup>rd</sup> May 2021
- National webinar “India, Mathematics and Ramanujan” organized by the Department of mathematics, University of Calicut during 22<sup>nd</sup> to 24<sup>th</sup> Feb. 2021
- Workshop for I MSc. Mathematics Students, prior to the Internship Programme; organized by the Department of mathematics, University of Calicut. During 2<sup>nd</sup> to 6<sup>th</sup> December 2019
- Awareness Programme on “Clean & Healthy Campus”; by Dr. E. Sreekumaran, Professor, Life Science, University of Calicut on 5<sup>th</sup> August 2019
- “National Seminar on Topology and analysis” organized by the Alumni of Department of mathematics, University of Calicut. on 8<sup>th</sup>,9<sup>th</sup> May 2019 Popular Lecture by Dr. Ramachandran P.T. in connection with Pi-Day Celebrations of the Department of mathematics, University of Calicut. on 14<sup>th</sup> March 2019
- National Seminar on “Recent Trends in Topology”; organized by the Department of Mathematics, University of Calicut, on 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> Feb, 2019
- “Ramanujan Seminar” organized by the Department of Mathematics, University of Calicut 15.09. 2018
- Popular Lecture series on “The History of Mathematics in India”; by Dr. Ramachandran P.T., Department of Mathematics, University of Calicut
- “2<sup>9</sup><sup>th</sup> Dr. P. Kesava Menon Memorial Lectures”, organized by the Department of Mathematics, in connection with the Golden jubilee celebrations of the University of Calicut on 1<sup>5</sup><sup>th</sup>, 1<sup>6</sup><sup>th</sup> & 1<sup>7</sup><sup>th</sup> March 2018
- “National Seminar on Topology and its Applications”, organized by the Department of Mathematics, University of Calicut on 23-25 March 2017

**51. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?**

**52. Highlight the Special facilities (if, any) of the Department.**

The Department Library is the most special facility of the Department, which is open to all for reference; Books will be issued to the faculty, staff and students of the Department only.

It is rich in collections of textbooks, references and journals. Facilitate to subscribe e-journals and these journals can be accessed by any member of the department at any place. It is completely automated, which enables library users to search the books database by titles, author and publication etc. Apart from the grant from state and University, NBHM also provides library grants 4.9 lakhs to 9 lakhs every year for buying books(Library grant received from NBHM so far: Rs. 14076200/-), journals and infrastructure to library.

**53. Highlight the unique features of the department.**

- NBHM Library Grant
- Bridge Course for Students admitted to MSc programme
- Academic collaboration with KSOM
- All faculties are freely available to the students at any time face to face or in phone
- Financial and moral support to needy students by faculties
- Financial support for the academic activities using PTA fund
- Programmes for College/School Teachers and Students

**54. State the Innovative practices adopted in the department.**

- Conducting Seminar/conference/workshop/training programmes... in regular intervals by availing eminent scholars all over the world
- Students are free to communicate face to face or in phone with all faculties
- Financial and moral support to economically backward students by faculties and PTA
- Programmes for College/School Teachers and Students
- Give Cash and other Prizes for students on their achievements, by the faculties

**55. Highlight the participation of students and faculty in extension activities.**

Faculty and students are actively involved in all curricular, co-curricular and extra-curricular activities of the University and extension programmes of the Department as volunteers and members of various committees related to various programmes

**56. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.**

- **Strengths:**
  - A very good collection of books and journal bound volumes(9000+), and accessibility to e-resources –e-books, e-journals,...
  - Eminent faculties with high qualifications and very good list of reputed Alumni
  - Student-friendly atmosphere
  - Utilises all opportunities for getting financial support to students from the University, Govt. or non Govt. agencies
  - High research outputs
- **Weaknesses:**
  - The over workload related to teaching, research and administrative matters results in some constraints in teaching - giving extra attention to slow learners and weak students, and to advanced learners too; giving additional programmes like certificate course, credit-transferable courses, etc.

- Documentation of the activities of the Department and personal achievements of the Faculties, Staff or Students.
- The constraints and over-rules in financial management
- Digital facilities for giving regular online classes, Certificate courses,...
- **Opportunities:**
  - Offering more programmes – Applied Mathematics, Data Science, Interdisciplinary programmes and open courses
  - Minor and Major Research Projects
  - Availing funds for researchers and faculties for attending academic conferences in India and abroad
  - Post Doctoral Programmes
  - Collaboration with leading Institutes
- **Challenges:**
  - giving extra attention to slow learners and weak students, and to advanced learners too
  - Getting digital facilities for giving regular online classes, Certificate courses,...
  - Introducing new programmes
  - Improving the Research culture and outputs
  - A journal/Magazine from the Department

**57. Future plans of the department:**

**Long term plans-**

- BSc-MSc Integrated Programme
- Interdisciplinary programmes
- Department Journal/Magazine
- Post Doctoral Programmes
- Collaboration with leading Institutes

**Short term plans**

- Research Projects
- More academic programmes in various levels and for various categories- Focussing SC/ST Students/Plus Two students/Outstanding students/weak students...
- Consultancy services

**Declaration by the Head of the Department/Institution:**

**I am aware that the above information provided by the department will be validated by the AAA committee during the visit.**

**Head of Department**

**Date:**



### Format for preparing the faculty profile:

(Provide the information for last five years from 2016-17 to 2020-21)

1. Name of the faculty: Sini P.
2. Name of the Department: Mathematics
3. Educational qualifications: MSc, B. Ed, NET, Ph.D
4. Present position: Assistant Professor
5. Address for correspondence: Assistant Professor in Mathematics  
Department of Mathematics  
University of Calicut, Thenhipalam  
Kerala – 673 635
6. E-mail and contact number: sini@uoc.ac.in    Mobile: 9744717571
7. Specialization: Topology, Fuzzy Mathematics
8. Total teaching experience: 18
9. Courses taught:

	MSc- I	MSc- II	MSc- III	MSc- IV	MPhil
2017-2018	Algebra-I	Ordinary Differential Equations	Complex Analysis	Functional Analysis-II	
2018-2019	Algebra-I	Ordinary Differential Equations	Complex analysis	Algebraic Graph Theory	Research Methodology
2019-2020	Algebra-I	Algebra-II	Advanced Topology	Algebraic Graph Theory	1. Research Methodology 2. Elective-Topology
2020-2021	Algebra-I	Algebra-II	Advanced Topology	Algebraic Graph Theory	1. Elective-Topology

10. Research experience: 11 years
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI. Nil
12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI. Nil

13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree. Nil
14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.

SL No.	Name	Topic of Research	Date of Registration
1	Darsana C.	Some Problems Related to Homogeneity in L-topological Spaces	28-10-2019
2	Angela Sunny	A Study on Semi-well ordered sets	29-01-2021

15. Provide information as indicated in 11 and 12 above.
16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.  
Provided in Annexure-I
17. Innovative processes developed in teaching and learning.  
Experimented modern technologies in teaching and learning.
18. Participation in curricular development: Member of PG Board of University of Calicut.  
Suggesting and implementing regular curriculum revising and revising the pattern of question paper of the Department.
19. Participation in co-curricular and extra-curricular activities.
1. Sastrolsavam 2018- Judge.
  2. Sastrolsavam 2019-Judge
20. Refresher and Orientation courses attended:
1. Refresher Course in Mathematical Science conducted by UGC\_HRDC, University of Calicut from 09-12-2-19 to 21-12-2019.
  2. NPTEL- AICTE- FDP (August to October 2019) for one week in Introduction to Abstract Group Theory
  3. NPTEL- AICTE- FDP (August to October 2019) for one week in Introduction to Rings and fields.
  4. Summer workshop for MSc students and College teachers held at Kerala School of Mathematics from 01 to 21 April 2017.
  5. NPTEL- AICTE- FDP (September to November 2020) for one week in Introduction to Abstract and Linear Algebra.

6. One week international e-faculty development programme on Fixed Point Theory and its Applications organized by Department of Mathematics, Manipal University, Jaipur September 15<sup>th</sup> to 19<sup>th</sup> 2020.

7. One week faculty development programme on ‘Online Education in Higher Education Institutions’ organized by Faculty Development Centre of KSHEC Thiruvananthapuram from 13-06-2020 to 17-06-2020.

21. Examination /Evaluation reforms initiated: Nil

22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

#### Anexure -I

1. **Sini P** and Ramachandran P. T.: On t-representability of the Cyclic Subgroups of the Symmetric Group- I, International Journal of Pure and Applied Mathematics Vol. 106, No.3 (2016), 851-857 ISBN: 1311-8080 (Printed Version) ISBN: 1314-3395 (online Version) doi: 10.12732/ijpam.v106i3.11.

2. Kavitha T., **Sini P.** and Ramachandran P. T. : On the Group of Closure Isomorphisms, Journal of Advanced Studies in Topology, 7(3)132-136 (2016),ISSN 2090-388X , 2090-8288.

3. **Sini P.**, Dhanya P. M. and Ramachandran P. T. : On Completely Homogeneous L-topological Spaces, Annals of fuzzy mathematics and informatics, 12(5), 703-718(2016) ISBN- 2093-9310, eISSN- 2287- 6235.

4. **Sini P.** : t-representability of Maximal Subgroups of the Symmetric Groups, Journal of Advanced Studies in Topology,9(1)27-33(2018), ISSN 2090-388X ,| 2090-8288,  
<https://doi.org/10.20454/jast.2018.1294>.

5. **Sini P.** : The Group of Homeomorphisms and the Cyclic group of Permutation, Palestine Journal of Mathematics, 8(2), 53–60 (2019), ISSN : 2219-5688.

6. **SiniP.** :Hereditary Homogeneous Generalized Topological Space. Iranian Journal of Mathematics and informatics, 14(2), 9-18 (2019), ISSN: 2008-9473 , 1735-4463, DOI: 10.7508/ijmsi.2019.02.002.

7. Kavitha T. and **SiniP.**:c-representability of Permutation Groups, Malaya Journal of Matematik,8(2) 478-484(2020), ISSN: 2319-3786; 2321-5666 DOI:10.26637/MJM0802/0026.

8. **SiniP.**:Completely Homogeneous c-spaces. Heliyon, 6(12),2020, ISSN:2405-8440  
<https://doi.org/10.1016/j.heliyon.2020.e05747>.

9. **SiniP.** :Group of L-homeomorphisms and  $L_{\tau}$ - representability of permutation groups. Fuzzy information and Engineering(2020) Vol.12, No.1, 97-108. ISSN :1616-8658, 1616-8666,  
<https://doi.org/10.1080/16168658.2020.179816>.

10. **Sini P.** :Group of L-homeomorphisms and permutation groups, IOP Journal of Physics: Conference Series (accepted) ISSN: 1742-6588, 1742-6596

23. Books published: with ISBN No., Without ISBN No., Chapters in books. Nil

24. Patents Applied/Granted: National. International, commercialized:Nil

25. Consultancy services provided and revenue generated: Nil

26. Conferences ,seminars, symposia and workshops organized as convener/coordinator:

1. Lecture series on Linear Algebra by Prof: Krishnskumar V., INSA Teacher Award winner 2016
2. National Seminar on Recent Trends in Topology held at Department of Mathematics, University of Calicut from 07-02-2019 to 09-02-2019.
3. National Seminar on Topology and analysis on 8<sup>th</sup>,9<sup>th</sup> May 2019 organized by the Alumni of Department of mathematics, University of Calicut.
4. Bridge Course for I<sup>st</sup> MSc Students (2019 Admission)in the Department of Mathematics, University of Calicut.
5. Virtual National Workshop on Topology in honor of Prof. Ramachandran P. T. from 14-02-2021 to 20-02 2021.
6. University level online Career Guidance Programme “Guidance for NET in Mathematics- Real Analysis” organized by the Department of mathematics, University of Calicut, 29<sup>th</sup> to 31<sup>st</sup> May 2021.
7. University level online Career Guidance Programme “Opportunities for Mathematics Students” organized by the Department of mathematics, University of Calicut on 29<sup>th</sup> May 2021.
8. University level online Skill development Programme “Life skills for youth development” organized by the Department of mathematics, University of Calicut on 28<sup>th</sup> May 2021.
9. University level online Skill development Programme “ An excursion in Linear Algebra” organized by the Department of mathematics, University of Calicut during 20<sup>th</sup> to 23<sup>rd</sup> May 2021.

27. Number of collaborations:Nil

28. Awards /recognitions received: International, National, State, University level. Nil

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13,14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

### **Annexure-I**

#### **Paper Presented:**

Sini P. Lf representability of Cyclic Permutation Groups, International conference on Advances in Applicable Mathematics on 07th and 08th December 2017 at Bharathiyar University.

Sini P. “Homogeneity in Generalized Topological Spaces”, MESMAC International Conference on Existence and Expression: Science, Philosophy and Art on 14-02-2017 to 16-02-2017 at MES Mampad College, Malappuram.

Sini P. “Group of Homeomorphisms and Maximal Subgroups of Symmetric Group”, 29 th Kerala Science Congress on 28-01-2017 to 30-01-2017 at Marthoma College Thiruvalla.

Sini P. Completely Homogeneous C-spaces, International Workshop and Conference on Topology and Applications from December 5th to 11th ,2018 at Ragagiri School of Engineering and Technology.

Sini P. “Invertible Generalized Topological Spaces”, MESMAC International Conference on Applying Theory:Paradigms, Practices Faultlines on 14-01-2020 to 16-01-2020 at MES Mampad College, Malappuram.

Sini P. “The group of L-homeomorphisms and Permutation Groups”, 2<sup>nd</sup> International Conference on Mathematical Modeling and Computational Methods in Science and Engineering from 22-01-2020 to 24-01-2020 at Alagappa university.

**Attended:**

- 1.National Seminar on Topology and analysis on 8<sup>th</sup>,9<sup>th</sup> May 2019 organized by the Alumni of Department of mathematics, University of Calicut.
2. MESMAC International Conference on Applying Theory:Paradigms, Practices Faultlines on 14-01-2020 to 16-01-2020 at MES Mampad College, Malappuram.
3. International Conference on Mathematical Modeling and Computational Methods in Science and Engineering from 22-01-2020 to 24-01-2020 at Alagappauniversity.
4. International Workshop and Conference on Topology and Applications from December 5th to 11th ,2018 at Ragagiri School of Engineering and Technology.
5. International conference on Advances in Applicable Mathematics on 07th and 08th December 2017 at Bharathiyar University.
- 6.Refresher Course for college Teachers-I on Commutative algebra held at Kerala School of Mathematics from 09 to 12 August 2018.
7. Two days national Seminar on Recent Trends in Mathematics held at Govt. College Madappally from 30-10-2018 to 31-10-2018.
8. Ramanujan Seminar held at Department of Mathematics, University of calicut on 15<sup>th</sup> September 2018.
9. One day Seminar Ganithayanam conducted by Ganithakalppam group and RDMCA Kozhikkode on at St.Joseph Anglo Indian HSS, Kozhikkode on 14<sup>th</sup> July 2018.
10. Two day Workshop on Revised Accreditation Framework of NAAC and Quality Systems in Higher Education organised by IQAC, University Calicut on 5<sup>th</sup> March 2019.
11. National Seminar on “Recent Trends in Topology” held at Department of Mathematics, University of Calicut from 07-02-2019 to 09-02-2019.
12. 29<sup>th</sup> Dr. P KesavaMenon Memorial Lectures held at Department of Mathematics, University of Calicut from 15<sup>th</sup> to 17<sup>th</sup> March 2018.
13. Workshop on “India, Women and Mathematics- Research and Opportunities” held at Department of Mathematics, CUSAT, Cochin-22 from 2<sup>nd</sup> to 3<sup>rd</sup> January 2018.
14. Online workshop on “Application of Geogebra” from 7<sup>th</sup> to 12<sup>th</sup> September 2020 organized by Pillai College of Engineering, New Panvel.

### **Resource Person/Chaired a session**

1. National Seminar on Topology and analysis on 8<sup>th</sup>,9<sup>th</sup> May 2019 organized by the Alumni of Department of mathematics, University of Calicut.
2. UGC sponsored Orientation Programme conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 06-03-2018.
3. UGC sponsored Orientation Programme conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 13-07-2018.
4. UGC sponsored Refresher course in Mathematics and Statistics conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 25-07-2018.
5. UGC sponsored Refresher course in Gender Studies conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 15-10-2018.
6. Third induction Programme from 07-01-2021 to 06-02-2021 conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 5-02-2021.
7. Fourth induction Programme from 07-03-2021 to 26-03-2021 conducted by the HRDC, University of Calicut: chaired a session and adjudicated the seminar paper presentation of the participants on 25-03-2021.

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## Format for preparing the faculty profile:

(Provide the information for last five years from 2016-17 to 2020-21)

1. Name of the faculty: Mubeena T
2. Name of the Department: Mathematics
3. Educational qualifications: M.Sc., Ph.D and NET
4. Present position: Assistant Professor
5. Address for correspondence: Pallikkal House, Thenkurissi Post, Palakkad-678671
6. E-mail and contact number: [mubeenatc@uoc.ac.in](mailto:mubeenatc@uoc.ac.in), 8281740665
7. Specialization: Topology, Group Theory
8. Total teaching experience: 8 Years
9. Courses taught: Graph Theory, Complex Analysis, Functional Analysis, Advanced Real Analysis, Differential Geometry, Linear Algebra, Topology-I, Topology-II.
10. Research experience: 8 years after Ph.D
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.: NIL
12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI. : NIL
13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.: NIL
14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.: NIL
15. Provide information as indicated in 11 and 12 above. : NA
16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.:

Resource Person(National Level):

- a. 3 hrs talk on 'The Model Spaces of Riemannian Geometry', in 11<sup>th</sup> Refresher Course in Mathematical Sciences from 09-21, December 2019, at UGC-HRDC, Calicut University Campus, on December 17, 2019.
- b. One talk on 'Twisted Conjugacy and Quasi-isometric Rigidity of irreducible lattices in Semisimple Lie groups', on 28 May 2019 in the Conference on

- Topology, Geometry and Related Topics at The Institute of Mathematical Sciences, Chennai.
- c. Two talks on 'Plane Geometries', on Dec 13, 2019, Govt. College, Malayinkeezhu, Trivandrum.
  - d. Three talks on 'Surface Theory' in the [National Workshop on Glimpses of Differential Geometry](#), on Jan. 31 and Feb. 1, 2019. at Central University of Kerala.
  - e. Two talks on 'Separation and countability Axioms, Connectedness and Compactness' in the National Seminar on Topology and its Applications at Govt. College Mokeri on Nov. 2, 2018.
  - f. One talk on 'Hyperbolic Groups' in the National Seminar on Topology and Its Applications' at University of Calicut, During 23-25 March 2017
  - g. One talk on "Introduction to Geometric Group Theory" on 25<sup>st</sup> January 2020 at St. Joseph's College Devagiri, Calicut in the National Seminar on Topology and its Applications held during 23-25, Jan. 2020.

### **Training Courses Given (Resource Person)**

- h. Two week training course in Algebra-I in [KSoM- Talent Nurture Program, 6-18 May, 2019](#)
- i. Two talks on Galois Theory in [The Academic Enrichment Programme at PRNSS College Mattannur](#) on Feb. 22, 2019

### **Schools, Workshops and Conferences Attended(National Level):**

1. Conference on Topology, Geometry and Related Topics at The Institute of Mathematical Sciences, Chennai. May 27,28, 2019.
2. National Workshop on Glimpses of Analysis, Dec 11-13, 2019, Govt. College, Malayinkeezhu, Trivandrum.
3. [National Workshop on Glimpses of Differential Geometry](#), Jan. 30, 31 and Feb. 1, 2, 2019. at Central University of Kerala.
4. National Seminar on Topology and its Applications at Govt. College Mokeri on Nov. 1,2, 2018.
5. National Seminar on Topology and Its Applications' at University of Calicut, During 23-25 March 2017
6. Refresher course on Semisimple Algebra at Kerala School of Mathematics, Calicut during 4-7 January 2018.
7. Refresher course on Group representation during 14- 17 November 2017 at Kerala School of Mathematics, Calicut
17. Innovative processes developed in teaching and learning. Online classes, sharing materials.
18. Participation in curricular development: - NIL
19. Participation in co-curricular and extra-curricular activities. - NIL
20. Refresher and Orientation courses attended:
  1. Orientation from 11/08/2016-07/09/2016 at ASC, University of Calicut



2. Refresher Course for Teachers from 06/11/2017- 26/11/2017 at Pune University.

21. Examination /Evaluation reforms initiated:NIL

22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS. :3

1. K. Ali Akbar, T. Mubeena, Conjugacy Classes of Bijective Real Cubic Polynomials, To appear in The Mathematics Student, 2021

2. K. Ali Akbar, T. Mubeena, Periodic Points of n-dimensional Toral Automorphisms, (to be appeared in Springer Proceedings in Mathematics and Statistics, 2021)

3. T. Mubeena, P. Sankaran, *Twisted Conjugacy and Quasi-isometric Rigidity of Irreducible Lattices in Semisimple Lie Groups*, (Indian Journal of Pure and Applied Mathematics, June 2019, Volume 50, Issue 2, pp 403-412)

23. Books published: with ISBN No., Without ISBN No., Chapters in books.: NIL

24. Patents Applied/Granted: National. International, commercialized: NIL

25. Consultancy services provided and revenue generated: NIL

26. Conferences ,seminars, symposia and workshops organized as convener/coordinator:3

- a. Local Coordinator of *KSCSTE-KSoM outreach program for undergraduates : Four day Foundation School in Mathematics*, 2019, November 20-23. Govt. College Kasaragod.
- b. Local Coordinator of *Indian Women and Mathematics (IWM): Regional Workshop on Research and Opportunities*, January 2-3, 2018, CUSAT
- c. Two day National Seminar on 'Glimpses of Analysis and Geometry' at Govt college Kasaragod, during December 1 - 2, 2016.

27. Number of collaborations: :NIL

28. Awards /recognitions received: International, National, State, University level.:NIL

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13,14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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## **Format for preparing the faculty profile:**

(Provide the information for last five years from 2016-17 to 2020-21)

1. Name of the faculty: Dr. Prasad T
2. Name of the Department: Department of Mathematics
3. Educational qualifications: M.Sc, B.Ed, M.Phil, Ph D
4. Present position: Assistant Professor
5. Address for correspondence: Assistant Professor, Department of Mathematics, University of Calicut, Thenhipalam P.O, Malappuram
6. E-mail and contact number: [prasadvalapil@gmail.com](mailto:prasadvalapil@gmail.com), 9447742183
7. Specialization: Operator theory and Functional Analysis
8. Total teaching experience: 3 years
9. Courses taught: M.Sc Mathematics, Integrated M.Sc
10. Research experience: 4 years 3 months  
Post Doctoral Fellow in Institute of Mathematical Sciences, Chennai - 2 years  
Post Doctoral Fellow in IISER Trivandrum - 2.3 years
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.
12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.
13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.
14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.
15. Provide information as indicated in 11 and 12 above.
16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.  
Conferences attended: 5
17. Innovative processes developed in teaching and learning. : No
18. Participation in curricular development: No

19. Participation in co-curricular and extra-curricular activities.: No
20. Refresher and Orientation courses attended:  
(i) Attended Pedagogical Training for Mathematics Teachers (PTMT-MTTS), Funded by the National Board for Higher Mathematics, Government of India, 6-12, April 2019, Government College Chittur, Palakkad.  
(ii) Online hands on Training programme on Learning management system-Moodle organized by center for e learning and IQAC of University of Calicut, 5<sup>th</sup> -15<sup>th</sup> March 2021.

21. Examination /Evaluation reforms initiated:No

22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

No of papers published: 35

H index: 3

Total Citations: 29

No in Scopus: 24

**Complete list of publications with ISSN, impact factor and link attached as Enclosure III**

23. Books published: with ISBN No., Without ISBN No., Chapters in books. No

24. Patents Applied/Granted: National. International, commercialized: No

25. Consultancy services provided and revenue generated: No

26. Conferences ,seminars, symposia and workshops organized as convener/coordinator: No

27. Number of collaborations: 7 (International collaborators)

1. Prof Kotaro Tanahashi, Japan
2. Prof. Muneo Cho, Japan
3. Prof. A. Uchiyama, Japan
4. Prof. J.E. Lee, South Korea
5. Prof. S. Mecheri, Algeria
6. Prof. M.H. M. Rashid, Jordan
7. Prof. A. Bachir, Saudi Arabia

28. Awards /recognitions received: International, National, State, University level.

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13, 14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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## Enclosure III

**DR. PRASAD T**

**Publication Details:**

<b>Scopus H- index</b>	<b>3</b>
<b>Scopus author id:</b>	<b>36502944000</b>
<b>Orchid id</b>	<b>0000-0002-9237-6018</b>
<b>Total Citations</b>	<b>29</b>

**Publications**

**(a) International Peer reviewed Journals**

Sl. no	Author	Name of the Paper	Journal	SCI/SCOPUS/UGC	ISSN-ISBN	Vol, Page nos	Year	Impact Factor with Link
2020								
1	T. Prasad	Spectral properties of some extensions of isometric operators	Annals of Functional Analysis,	<b>SCIE, Scopus</b>	2008-8752	11, 626-633	<b>2020</b>	<b>0.740 (JCR)</b> <a href="https://link.springer.com/article/10.1007/s43034-019-00043-y">https://link.springer.com/article/10.1007/s43034-019-00043-y</a>
2	T. Prasad	class p-wA(s,t) operators and invariant subspaces	Acta Sci. Math. (Szeged)	<b>Scopus</b>	0001-6969	86:3-4, 671-679	<b>2020</b>	<b>0.605 (SJR)</b> doi:10.14232/actasm-020-775-8
3	T. Prasad	Class p-wA(s; t) composition operators	Asian-European J. Math	<b>Scopus</b>	1793-7183	13, 2050-086	<b>2020</b>	<b>0.39 (SJR)</b> <a href="https://www.worldscientific.com/doi/10.1142/S1793557120500862">https://www.worldscientific.com/doi/10.1142/S1793557120500862</a>
4	T. Prasad	Coposinormal composition operators on H <sup>2</sup>	J. Math. Ext	<b>UGC</b>	2476-7719		2020 (Accepted)	<b>0.297 (SJR)</b> <a href="https://www.ijmex.com/index.php/ijmex/article/view/1440">https://www.ijmex.com/index.php/ijmex/article/view/1440</a>
5	S. Mecheri T. Prasad,	Classess of operators related to isometries	Adv. in Operator Theory	<b>Scopus</b>	2538-225X	5, 382-392	<b>2020</b>	<b>0.62(SJR)</b> <a href="https://link.springer.com/article/10.1007/s43036-019-00029-6">https://link.springer.com/article/10.1007/s43036-019-00029-6</a>

6	M. Cho, T.Prasad, K. Tanahashi M. H.M Rashid A. Uchiyama	Spectrum is continuous for class $p$ - $wA(s; t)$ operators	Filomat	SCIE, Scopus	2406-0933		2020 (Accepted)	0.760 (JCR)
7	S. Mecheri T. Prasad	Fuglede-Putnam type theorem for extension of $M$ -hyponormal operators,	Ukr. Math. J ,	SCIE, Scopus	1573-9376		2021(accepted)	0.518 (JCR)
8	S. Mecheri T. Prasad	Analytic extension of totally polynomially posinormal operators	Math. Report (accepted)	SCIE, Scopus	2285-3898		2020 (Accepted)	0.390 (JCR)
9	A. Bachir, T. Prasad	Fuglede-Putnam theorem for $(\alpha; \beta)$ normal operators	Rend. Circ. Mat. Palermo	Scopus	0009725X, 19734409	69(3):1243-1249	2020	0.79 (SJR) <a href="https://link.springer.com/article/10.1007/s12215-019-00454-9">https://link.springer.com/article/10.1007/s12215-019-00454-9</a> .
2019								
10	S. Mecheri T. Prasad	Triangular- $n$ -isometric operators	Linear and Multilinear Algebra	SCIE, Scopus	1563-5139	67, 1132 - 1145	2019	1.110 (JCR) <a href="https://www.tandfonline.com/doi/abs/10.1080/03081087.2018.1450346">https://www.tandfonline.com/doi/abs/10.1080/03081087.2018.1450346</a>
11	M. Cho, T. Prasad, M.H.M Rashid, K. Tanahashi A. Uchiyama	Fuglede-Putnam theorem and quasisimilarity of class $p$ - $wA(s, t)$ operators	Operator and Matrices	SCIE, Scopus	1848-9974	13(1) 293-299.	2019	0.417 (JCR) <a href="http://files.else-math.com/abstracts/oam-13-19-abs.pdf">http://files.else-math.com/abstracts/oam-13-19-abs.pdf</a>
12	T. Prasad, M. Cho, M.H.M Rashid, K.Tanahashi A. Uchiyama	class $p$ - $wA(s; t)$ operators and range kernel orthogonality	Scientiae Mathematicae Japonicae	Scopus	1346-0862.	82,1, 45-55	2019	<a href="https://www.jstage.jst.go.jp/article/isms/82/1/82_45/article">https://www.jstage.jst.go.jp/article/isms/82/1/82_45/article</a>
2018								
13	M. Cho, J.E. Lee, T. Prasad K. Tanahashi	Complex isosymmetric operators	Adv. Oper. Theory	Scopus	2538-225X	3(3) 620-631.	2018	0.62 (SJR) <a href="https://projecteuclid.org/euclid.aot/1520046048">https://projecteuclid.org/euclid.aot/1520046048</a>
14	M.H.M Rashid, M. Cho, T. Prasad, K. Tanahashi A. Uchiyama	Weyls theorem and Putnam's inequality for $p$ - $wA(s; t)$ operators	Acta Sci. Math. (Szeged)	Scopus	0001-6969	84, 573-589.	2018	0.605 (SJR) <a href="http://pub.acta.hu/acta/showCustomerArticle.action?id=50403&amp;dataO">http://pub.acta.hu/acta/showCustomerArticle.action?id=50403&amp;dataO</a>

								<a href="#">bjectType=article&amp;returnAction=showCustomerVolume&amp;sessionDataSetId=5e05ca3080d834c7&amp;style=</a>
2016								
15	M.H.M Rashid T.Prasad	Stability of Versions of Weyl type theorems under tensor Product	Ukr. Math. J	<b>SCIE, Scopus</b>	1573- 9376	68(4) , 612- 624.	2016	<b>0.518 (JCR)</b> <a href="https://link.springer.com/article/10.1007/s11253-016-1245-y">https://link.springer.com/article/10.1007/s11253-016-1245-y</a>
16	S.Mecheri T.Prasad	On n-quasi-m- isometric operators	Asian- Eur. J. Math	<b>Scopus</b>	1793- 5571	9(4), 8 page s	2016	<b>0.39 (SJR)</b> <a href="https://www.worldscientific.com/doi/10.1142/S179355711650073X">https://www.worldscientific.com/doi/10.1142/S179355711650073X</a>
2015								
17	M.H.M Rashid T.Prasad	Weyl type theorems for algebraically class HNP operators.	Ann. Funct. Anal	<b>SCIE, Scopus</b>	2008- 8752	6(3), 262- 273.	2015	<b>0.740 (JCR)</b> <a href="https://projecteuclid.org/euclid.afa/1429286045">https://projecteuclid.org/euclid.afa/1429286045</a>
18	M.H.M Rashid T. Prasad	Property (Sw) for bounded linear operators	Asian- Eur. J. Math,	<b>Scopus</b>	1793- 5571	08(1)	2015	<b>0.39(SJR)</b> <a href="https://www.worldscientific.com/doi/abs/10.1142/S1793557115500126?journalCode=aejm">https://www.worldscientific.com/doi/abs/10.1142/S1793557115500126?journalCode=aejm</a>
19	M.H.M Rashid T. Prasad	The stability of property(gw) under compact perturbation,	Acta Mathemat ica Vietnamic a	<b>Scopus</b>	2315- 4144	39, 325- 336.	2014	<b>0.54 (SJR)</b> <a href="https://link.springer.com/article/10.1007/s40306-014-0065-0">https://link.springer.com/article/10.1007/s40306-014-0065-0</a>
20	M.H.M Rashid T. Prasad	Property (Bgw) and Perturbations	An. Stiint. Univ. Al. I. Cuza Iasi. Mat. (N.S.)	<b>Scopus</b>	1221- 8421		2014	<b>0.361 (SJR)</b> <a href="https://www.math.uaic.ro/~annalsmath/pdf-uri%20anale/F1(2017)/Rashid_Prasad_pg53.pdf">https://www.math.uaic.ro/~annalsmath/pdf-uri%20anale/F1(2017)/Rashid_Prasad_pg53.pdf</a>
21	M.H.M Rashid T. Prasad	Variations of Weyl Type theorems	Ann Funct Anal	<b>SCIE, Scopus</b>	2008- 8752	4(1) 40- 52	2013	<b>0.740 (JCR)</b> <a href="https://projecteuclid.org/euclid.afa/1399899835">https://projecteuclid.org/euclid.afa/1399899835</a>
22	M.H.M Rashid T.Prasad	Property (Bb) and Tensor Product	Filomat	<b>SCIE, Scopus</b>	2406- 0933	27(7) 1297 - 1303	2013	<b>0.760 (JCR)</b> <a href="https://www.jstor.org/stable/24896465?seq=1">https://www.jstor.org/stable/24896465?seq=1</a>

23	D.Senthilkumar, P. Chandrakala T.Prasad	Tensor Product Operators Induce Dynamical System on Weighted Locally Convex Space	Jordan Journal of Math and Stat (JJMS)	Scopus	2075-7905	6, 169-181	2013	1.465 (ISI) <a href="http://journals.yu.edu.io/ijms/Issues/Vol6No32013PDF/1.pdf">http://journals.yu.edu.io/ijms/Issues/Vol6No32013PDF/1.pdf</a>
24	D.Senthilkumar, S.M Sherin Joy T.Prasad	Generalised class $Q$ operators	Int.J. Appl. Math	Scopus	1311-1728	167-170.	2011	0.27 (SJR) <a href="http://diogenes.bg/ijam/content/s/2011-24/Contents_IJAM_24_1_2011.pdf">http://diogenes.bg/ijam/content/s/2011-24/Contents_IJAM_24_1_2011.pdf</a>
25	T. Prasad A. Bachir	Fuglede-Putnam theorem for $p$ -hyponormal or class $Y$ operators	Int. J. Open Problems Compt. Math	NA	1998-6262	11,17-24.	2018	<a href="http://www.ijopcm.org/Vol/2018/1.3.pdf">http://www.ijopcm.org/Vol/2018/1.3.pdf</a>
26	K.Tanahashi, T. Prasad A. Uchiyama	Quasinormality and subscalarity of class $p$ $wA(s; t)$ operators	Funct. Anal. Approx. Comput	NA	1096-0783	9(1), 61-68	2015	<a href="http://operator.pmf.ni.ac.rs/www/pmf/publikacije/faac/2017/FAAC-9-1/faac-9-1-6.pdf">http://operator.pmf.ni.ac.rs/www/pmf/publikacije/faac/2017/FAAC-9-1/faac-9-1-6.pdf</a>
27	T. Prasad K.Tanahashi	On class $p$ - $wA(s; t)$ operators	Funct. Anal. Approx. Comput	NA	1096-0783	6(2) 39-42.	2014	<a href="http://operator.pmf.ni.ac.rs/www/pmf/publikacije/faac/2014/2014-6-2/faac-6-2-5.pdf">http://operator.pmf.ni.ac.rs/www/pmf/publikacije/faac/2014/2014-6-2/faac-6-2-5.pdf</a>
28	M. Mridula T.Prasad	* Class A Composition operators	International Journal of Mathematical Archive	NA	2229-5046	167-170	2013	<a href="http://www.ijma.info/index.php/ijma/article/view/1866/0">http://www.ijma.info/index.php/ijma/article/view/1866/0</a>
29	D.Senthilkumar T.Prasad S.M Sherin Joy	Spectral properties of class A composition operators	Far. East. J. Math. Sci (FJMS)	NA	0972-0871	61, 231-238.	2012	1.81(Google based) <a href="http://www.pphmj.com/abstract/6466.htm">http://www.pphmj.com/abstract/6466.htm</a>
30	D.Senthilkumar P.Maheswari Naik T.Prasad	Composition of absolute $(p; r)$ paranormal and $p$ -paranormal operators	Far. East. J. Math. Sci(FJMS),	NA	0972-0871	68, 161-173	2012	<a href="http://www.pphmj.com/abstract/6926.htm">http://www.pphmj.com/abstract/6926.htm</a>
31	D.Senthilkumar T.Prasad M. Kumaresan	N-class A composition operators	International Journal of Mathematical Archive	NA	2229-5046	2, 2561 - 2564	2011	<a href="http://www.ijma.info/index.php/ijma/article/view/773">http://www.ijma.info/index.php/ijma/article/view/773</a>

32	D.Senthilkumar T.Prasad	Weyl's theorem for algebraically hereditarily absolute $\square(p; r)$ paranormal operators	Int. J. Funct. Anal. Oper. Theory Appl	NA	0975-2919	2, 103-113.	2010	0.20(Google based) <a href="http://www.pphmj.com/abstract/5596.htm">http://www.pphmj.com/abstract/5596.htm</a>
33	D.Senthilkumar T.Prasad	M class Q composition operators	Sci. Magna	NA	1556-6706	6, 25-30.	2010	<a href="http://fs.unm.edu/ScientiaMagna6no1.pdf">http://fs.unm.edu/ScientiaMagna6no1.pdf</a>
34	D.Senthilkumar T.Prasad	Composition operators of class $Q^*$	Int. J. Math. Anal	NA	1314-7579	4, 1035 - 1040	2010	<a href="http://www.m-hikari.com/ijma/ijma-2010/ijma-21-24-2010/prasadIJMA21-24-2010.pdf">http://www.m-hikari.com/ijma-2010/ijma-21-24-2010/prasadIJMA21-24-2010.pdf</a>
35	D.Senthilkumar and T.Prasad	Riesz Projections and Weyl's theorem for hereditarily absolute $\square(p; r)$ paranormal operators	Bull. Math. Anal. Appl	NA	1821-1291	2, 100-108.	2010	<a href="http://www.bmatha.org/repository/docs/BMAA2-3-12.pdf">http://www.bmatha.org/repository/docs/BMAA2-3-12.pdf</a>

**(b) International Conference proceedings publication**

Sl. no	Name of the Paper	Conference	Year	Link
1	Furuta Inequality and p-wA(s,t) operators	RIMS K <sup>okyuroku</sup> .	2017	<a href="http://www.kurims.kyoto-u.ac.jp/~kyodo/kokyuroku/contents/pdf/2033-19.pdf">http://www.kurims.kyoto-u.ac.jp/~kyodo/kokyuroku/contents/pdf/2033-19.pdf</a>
2	A survey of class p-wA(s,t) operators, RIMS conference	RIMS K <sup>okyuroku</sup>	2019	<a href="http://www.kurims.kyoto-u.ac.jp/~kyodo/kokyuroku/contents/pdf/2113-06.pdf">http://www.kurims.kyoto-u.ac.jp/~kyodo/kokyuroku/contents/pdf/2113-06.pdf</a>



## Faculty profile: Dr. Preethi Kuttipulackal

(from 2016-17 to 2020-21)

1. Name of the faculty : Dr. Preethi Kuttipulackal
2. Name of the Department : Mathematics
3. Educational qualifications : M.Sc., B.Ed., M.Phil., Ph.D. & UGC-CSIR –NET (LS)
4. Present position : Associate Professor & Head
5. Address for correspondence
  - Office : Department of Mathematics, University of Calicut,  
Calicut University PO, Malappuram, Kerala-673635
  - Residential : Kuttipulackal House, Kolakkattuchali PO,  
Chelembra, Malappuram, Kerala-673634
6. E-mail and contact number : [pretikut@rediffmail.com](mailto:pretikut@rediffmail.com); 9562475245
7. Specialization : Graph Theory; Algebra
8. Total teaching experience : 21
9. Courses taught :
  - MSc. : Abstract Algebra-I, Abstract Algebra-II, Linear Algebra, Real Analysis-I, Discrete Mathematics, Number Theory, Linear Programming and Operations Research, Functional Analysis, Representation Theory of Groups, Algebraic Topology, Graph theory
  - MPhil. : Module Theory, Algebraic Graph Theory, Theory of Domination in Graphs, Category Theory, Topological Groups, Topological Vector Spaces
  - PhD. : Theory of Domination in Graphs, Graph planarity and Hypergraphs
10. Research experience : 12 years
11. Major research projects completed (Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.) : Nil
12. Minor research projects completed (Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.) : Nil
13. Number of students awarded Ph.D. degree (Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree) : Nil

14. Number of students registered for Ph.D. degree (Name of the student, topic of research, date of registration) : 4
1. Rafia Yusuf (Part-time); A Study on Mixed Tree Domination Polynomial; 16.7.2018
  2. Saira Kurian(JRF); A Study of Hypergraph Planarity; 21.03.2019
  3. Ajeesh T.T.(JRF); A Study of Hypergraphs; 29.04.2019
  4. Archana S.(JRF): Some aspects of Semigraphs' 05.02.2021
15. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended, Presented paper, chaired session. Resource person.

Provided in Annexure -I

16. Innovative processes developed in teaching and learning :

- Experiment - various methods for teaching, class room activities
- to impart modern technologies in teaching and learning
  - various evaluation process
  - Preparing and giving additional lectures to students in the Dept. and other Colleges help to achieve more in the field of teaching and research

17. Participation in curricular development:

- Active in
- Suggesting and implementing regular curriculum revising and revising the pattern of question paper for MSc., MPhil, and PhD programmes in Mathematics, as a member, PG Board of Studies in Mathematics in the University of Calicut and other Autonomous Colleges.
  - Research activities of various Research centres as an RAC member
  - Evaluation process of various Universities as a Board member of exam
  - Academic and administrative activities of the School of Distance Education(SDE), University of Calicut as a Board member, CIQA (Centre for Internal quality assurance)of SDE
  - Prepared self Learning material for MSc Mathematics programme of the School of Distance Education(SDE), University of Calicut

18. Participation in co-curricular and extra-curricular activities:

■ Coordinated

- Refresher Course in “Basic Mathematics(Interdisciplinary)” conducted by UGC-HRDC, University of Calicut, 15.06.2017 to 05.07.2017
- Refresher Course in “Mathematics and Statistics” conducted by UGC-HRDC, University of Calicut, 19.07.2018 to 08.08.2018
- Various programmes in the Department- national and regional seminars/webinars, workshops, Career Guidance programmes, Bridge Course for I year students, Internship programmes for MSc Students,

■ Contributed to the academic and administrative activities of the University as

- Board Member, IQAC(Internal quality assurance cell), Calicut University
- Board Member, PG Board of Studies, Calicut University
- Board Member, PG Board of Studies, DGMMES College, Mampad(Autonomous)
- Member CIQA(Centre for Internal quality assurance), SDE, Calicut University
- Member, CSIF committee of the University
- Head of the Department
- Department Council Secretary
- PTA secretary/joint secretary
- Subject expert of various selection committees for appointing Assistant Professor in Mathematics in various centres
- Resource person- for refresher courses, conducted by UGC-HRDC, Calicut University;  
- for various international, national and regional seminars, workshops, nurture programmes, etc. conducted by various Colleges and institutes
- Polling /counting official for DSU election every year
- Member, Grievance Committee, DSU election, 2019-20
- Provided internship programmes for MSc students from various colleges

19. Refresher and Orientation courses attended :

Attended as coordinator(Coordinated 2 Refresher courses of HRDC ) and as resource person only

20. Examination /Evaluation reforms initiated :

Revised the question paper pattern of the end semester exam of MSc. Mathematics to include at least three types of questions.

Experimenting various techniques and technologies for internal valuation

- including online test series, quizzes, group discussions, surveys, viva-voce,...

- using ICT tools and other online resources; Google forms, Quizizz, ...

21. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

Provided as annexure -II

22. Books published: with ISBN No., Without ISBN No., Chapters in books:

Real analysis I -Self Learnig Material for I Sem MSc(SDE, Calicut University); 2020.

23. Patents Applied/Granted: National. International, commercialized: nil

24. Consultancy services provided and revenue generated :

Provided consultancy for internship programmes and awarded certificates, no revenue generated

25. Conferences, seminars, symposia and workshops organized as convener/coordinator:

Provided as annexure -III

26. Number of collaborations :

The Department as a whole has collaborative activities with the Kerala School of Mathematics, Kozhikode, faculty members are all part of it.

A mentor and resource person for the National level Nurture Programme of KSOM.

Took initiative in offering a mathematics course for PG students of the Department of Biotechnology, University of Calicut, in 2020

27. Awards /recognitions received: International, National, State, University level: nil

## Annexure -I

**Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.**

- University level online Career Guidance Programme “Guidance for NET in Mathematics-Real Analysis” organized by the Department of mathematics, University of Calicut, 29<sup>th</sup> to 31<sup>st</sup> May 2021, organized
- University level online Career Guidance Programme “Opportunities for Mathematics Students” organized by the Department of mathematics, University of Calicut on 29<sup>th</sup> May 2021, organized
- University level online Skill development Programme “Life skills for youth development” organized by the Department of mathematics, University of Calicut on 28<sup>th</sup> May 2021, organized
- University level online Skill development Programme “ An excursion in Linear Algebra” organized by the Department of mathematics, University of Calicut during 20<sup>th</sup> to 23<sup>rd</sup> May 2021, organized
- NAAC webinar(National) on “”Governance and leadership”-a Webex event. Topic: Governance and Leadership Host: Samuel Lourdraj C, System Analyst Monday, May 17, 2021 3:00 pm, India Time (Mumbai, GMT+05:30) Event number: 182 816 6609 Event password: 1234, attended
- National webinar “India, Mathematics and Ramanujan” organized by the Department of mathematics, University of Calicut during 22<sup>nd</sup> to 24<sup>th</sup> Feb. 2021, Coordinated
- National level Online FDP- Technology integration in Higher Education, organized by MHRD TLC, University of Calicut, during 5<sup>th</sup> Jan to 11<sup>th</sup> Jan 2021, attended and successfully completed
- National Mathematical day webinar organized by NAAC, on 22<sup>nd</sup> Dec. 2020, attended, attended
- Ramanujan Yatra-A discourse by Prof. Manjul Bhargava (International level) jointly organized by India Science, KSOM, RMS,... on 22<sup>nd</sup> Dec. 2020, attended
- National level Online Short Term Training Programme on “Matlab and Mathematica for Scientific Research” organized by Department of Mathematics, Arul Anandar College (Autonomous), Karumathur, during 27<sup>th</sup> July to 29<sup>th</sup> July 2020; Attended and successfully completed

- “Online Hands on Training Programme on Learning Management System-Moodle” Jointly organized by Department of Computer Science and IQAC, University of Calicut, during 25<sup>th</sup> May to 9<sup>th</sup> June 2020; Attended and successfully completed
- National Seminar on “Anantham Viswathomugham – Glimpses of Vedic Mathematics” Organized by Bharatheeya Vidyanikethan College of Teacher Education, Kallekkad, Palakkad, 28<sup>th</sup> -29<sup>th</sup> Feb.2020 ; Keynote speaker; on 28<sup>th</sup>.
- UGC sponsored “Refresher Course in Mathematical Science”(9.12.2019-21.12.2019)” conducted by the HRDC, University of Calicut; Chaired a session and adjudicated the Seminar Paper presentations of Participants on 17.12.2019.
- UGC sponsored “Refresher Course in Mathematical Science”(9.12.2019-21.12.2019)” conducted by the HRDC, University of Calicut; Resource Person on 17.12.2019.
- Workshop for I MSc. Mathematics Students, prior to the Internship Programme; organized by the Department of mathematics, University of Calicut. During 2<sup>nd</sup> to 6<sup>th</sup> December 2019; Resource Person and Organizer
- “Two Day Foundation School in Mathematics for undergraduates”(27.11.2019-28.11.2019) sponsored by KSCSTE, Govt. of Kerala organized by Kerala School of Mathematics(KSOM) in association with T.M. Govt. College, Thirur; Resource person
- Awareness Programme on “Clean & Healthy Campus”; by Dr. E. Sreekumaran, Professor, Life Science, University of Calicut on 5<sup>th</sup> August 2019; attended
- “National Seminar on Topology and analysis” organized by the Alumni of Department of mathematics, University of Calicut. on 8<sup>th</sup>,9<sup>th</sup> May 2019; Participated
- Popular Lecture by Dr. Ramachandran P.T. in connection with Pi-Day Celebrations of the Department of mathematics, University of Calicut. on 14<sup>th</sup> March 2019; Participated
- National Seminar on “Recent Trends in Topology”; organized by the Department of Mathematics, University of Calicut, on 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> Feb, 2019; Participated
- “MESMAC International Conference on People First? Man, Machine, Milieu” organized by MES Mampad College(Autonomous) in Association with Kerala State Higher Education Council on 15, 16 & 17 Jan 2019; Chaired a session
- “Graphics” Two Day National Seminar(5<sup>th</sup> & 7<sup>th</sup> November 2018) on Linear Programming organized by the Department of Mathematics, M.A.M.O. College, Mukkom, 7<sup>th</sup> November 2018; Resource Person

- “Two Day National Seminar on Recent Trends in Mathematical Analysis” organized by PG Department of Mathematics, T.M. Govt. College, Thirur, Sponsored by Directorate of Collegiate Education, Govt. of Kerala, on 11<sup>th</sup> & 12<sup>th</sup> October 2018; Participated
- Workshop on “SWAYAM PRABHA DTH Channel” organized by the Educational Multimedia Research Centre (EMMRC), University of Calicut on 5<sup>th</sup> October 2018; Participated
- “Ramanujan Seminar” organized by the Department of Mathematics, University of Calicut 15.09.2018; Participated
- Popular Lecture series on “The History of Mathematics in India”; by Dr. Ramachandran P.T., Department of Mathematics, University of Calicut. attended
- “29<sup>th</sup> Dr. P. Kesava Menon Memorial Lectures”, organized by the Department of Mathematics, in connection with the Golden jubilee celebrations of the University of Calicut on 15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> March 2018; Coordinated
- “MESMAC International Conference on Ecologies of the New: matter, Mind & Body” organized by MES Mampad College (Autonomous) on 9, 10 & 11 Jan 2018; Resource Person
- “One Day workshop on Mathematica”, organized by the Department of Physics, University of Calicut in Collaboration with Wolfram Research Inc., USA, and UGC-HRDC, University of Calicut on 20.06 2017; Participated
- “National Seminar on Topology and its Applications”, organized by the Department of Mathematics, University of Calicut on 23-25 March 2017; Participated and presented the Paper “A generalization of Euler’s formula to Hypergraphs”.

## Annexure -II

**Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.**

- *The mixed tree domination polynomial of some path related graphs*; Rafia Yusuf and preethi Kuttipulackal; International Journal of Applied Engineering Research Vol.14, Number 8, 2019(Special Issue). <http://www.ripublication.com>
- *A Study of Mixed Tree Domination polynomial in some class of Graphs*; Rafia Yusuf and preethi Kuttipulackal; South East Asian Journal of Mathematics and Mathematical Sciences Vol.5, No.3(2019), 129-140
- *Tree Domination Polynomial of Some Graphs*; Rafia Yusuf and preethi Kuttipulackal; Malaya Journal of Matematik, Vol S. No.1, 2019, pages 451-456. <http://doi.org/10.26637/MJM0S01/0080>
- *The Mixed Tree Domination Polynomial of Some Derived Graphs*; Rafia Yusuf and preethi Kuttipulackal; International Journal of Research in Advent Technology, March 2019, Vol 7. No.3, pages 1193-1199; impact factor : 5.153
- *The mixed tree domination polynomial of some derived graphs*; Rafia Yoosuf, Preethi Kuttipulackal, “”, International conference on novel trends in pure and applied mathematics, ICNTPAM-2019, held at department of Mathematics, University of Kerala, Kariavattom, Thiruvananthapuram on January 22-24, 2019(Paper presented).
- *Domination in Hypergraphs*; Rafia Yusuf and preethi Kuttipulackal; Singularities- A Transdisciplinary biannual Research Journal, 558-563, 2018
- *The mixed tree domination polynomial*; Preethi Kuttipulackal and Rafia Yoosuf, Contemporary studies in discrete mathematics, Vol.2, 2018, 15-19, e-ISSN: 2581-3678.
- *Cube Harmonious Labeling*; Rafia Yusuf and preethi Kuttipulackal; Memes-Interdisciplinary Science Journal, 2017 Vol 1(1), 95-100. <http://mesmampad.org/researchjournals.php>



### **Annexure -III**

#### **Conferences, seminars, symposia and workshops organized as convener/ coordinator:**

- University level online Skill development Programme “ Life skills for youth development” organized by the Department of mathematics, University of Calicut on 28<sup>th</sup> May 2021, organizer
- University level online Skill development Programme “ An excursion in Linear Algebra” organized by the Department of mathematics, University of Calicut during 20<sup>th</sup> to 23<sup>rd</sup> May 2021, organizer
- National webinar “India, Mathematics and Ramanujan” organized by the Department of mathematics, University of Calicut during 22<sup>nd</sup> to 24<sup>th</sup> Feb. 2021, coordinated
- UGC sponsored “Refresher Course in Mathematics and Statistics” conducted by the HRDC, University of Calicut from 19.07.2018 to 08.08.2018; Coordinated
- Bridge Course for I Year MSc Students organized by the Department of Mathematics, University of Calicut during the period of July to September 2018; Coordinated
- 29<sup>th</sup> Dr. P. Kesava Menon Memorial Lectures, organized by the Department of Mathematics, in connection with the Golden jubilee celebrations of the University of Calicut on 15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> March 2018; Coordinated
- Bridge Course for I Year MSc Students conducted by the Department of Mathematics, University of Calicut during the period of August to October 2017; Coordinated
- UGC sponsored “Refresher Course in Basic Sciences(Interdisciplinary)” conducted by the HRDC, University of Calicut from 15.06.2017 to 05.07.2017; Coordinated
- Career Guidance Programme organized by the Department of Mathematics and UGC Career and Counselling Cell, University Employment Information & Guidance bureau, University of Calicut on 28<sup>th</sup> March 2017; Coordinated

## Format for preparing the faculty profile:

(Provide the information for last five years from 2016-17 to 2020-21)

- Name of the faculty : Dr. Ramachandran P.T.
- Name of the Department : Mathematics
- Educational qualifications : MSc, PhD
- Present position : Retired on 31.05.2019
- Address for correspondence : Thankam, Mele Kizhissery,  
Kuzhimanna P.O., Malappuram Pin 673641
- E-mail and contact number : [ptramachandran@gmail.com](mailto:ptramachandran@gmail.com), 9447791504
- Specialization : General Topology, Fuzzy Mathematics
- Total teaching experience : 35 years
- Courses taught : Discrete Mathematics, Topology, Research Methodology, Topology and Dynamical Systems, Graph Theory, Advanced Topology
- Research experience : 32 years
- Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.
- Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.
- Number of students awarded Ph.D. degree:

Name of the student	Topic of research	Date of registration	Date of declaration of Ph.D. degree.
Sini P	Studies on the group of Homeomorphisms and the group of L-Fuzzy Homeomorphisms	01.11.2012	31.08.2017
Dhanya P M	Some Problems on Generalized Topologies and Fuzzy Generalized Topologies	01.11.2012	17.08.2017
Kavitha T	Some Problems on Cech closure spaces	26.03.2012	20.07.2018

- Number of students registered for Ph.D. degree:

Name of the student	Topic of research	Date of registration
Sruthi A K	Studies on C-spaces	19.08.2016
Naheeda Farhath C.P.	Some Problems related to the Group of Homeomorphisms	03.01.2018
Saji N.R.	Some investigations on C-Spaces	02.07.2018

- Provide information as indicated in 11 and 12 above.
- Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.

23.6.2016- **On the Contributions of Mathematics to Astronomy with Special Reference to the Work of the Kerala School** in the Distinguished Lecture Series sponsored by KSCSTE at St. Albert's College, Ernakulam

19.8.2016 - **Mathematics in India**, Department of Mathematics, University of Calicut

23.8.2016 **Mathematicians of Kerala**, Department of Mathematics, University of Calicut

19.12.16 A talk in Sasthrajalakam of All India Radio, Kozhikode in the context of the National Mathematics Day.

26.12.16 **On the Kerala School Of Mathematics**, in the DST- Inspire Science Camp organised by S.N. College, Kannur

- Innovative processes developed in teaching and learning.
- Participation in curricular development:
- Participation in co-curricular and extra-curricular activities.
- Refresher and Orientation courses attended:
- Examination /Evaluation reforms initiated:
- Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

Kavitha T., Sini P. and Ramachandran P. T. : On the Group of Closure Isomorphisms, Journal of Advanced Studies in Topology, 7(3)132-136 (2016), eISSN 2090- 388X , pISSN 2090-8288

- Sini P., Dhanya P. M. and Ramachandran P. T. : On Completely Homogeneous L-topological Spaces, Annals of fuzzy mathematics and informatics, 12(5), 703-718(2016) pISBN- 2093-9310, eISSN-2287-6235

Kavitha T., Kunheenkutty. and Ramachandran P. T. : Upper neighbours of Cech closure operators, Arabian Journal of Mathematics, 2193-5351(2018).

- Sruthi A. K. and Ramachandran P. T : On c-spaces and Hypergraphs, Far east Journal of Mathematics, **0972-0871** <http://dx.doi.org/10.17654/MS110010083>(2019).

- Books published: with ISBN No., Without ISBN No., Chapters in books.
- Patents Applied/Granted: National. International, commercialized:
- Consultancy services provided and revenue generated:
- Conferences ,seminars, symposia and workshops organized as convener/coordinator:

Sl.No	Title of the event	Organizer/sponsor &venue	International/ National	Duration
1	Mathematics in India	Department of Mathematics		19.08.2016
2	Mathematics in Kerala	Department of Mathematics		23.08.2016
3	Bridge Course for MSc Students	Department of Mathematics		01.09.2016, 09.09.2016, 26.09.2016, 27.09.2016, 30.09.2016, 20.10.2016
4	Nurture Programme for First yearMSc Students of Affiliated Colleges	Department of Mathematics		18.02.2017, 25.02.2017, 26.02.2017, 04.03.2017, 05.03.2017, 11.03.2017, 12.01.2017, 18.03.2017
5	TOPOLOGY AND ITS APPLICATIONS	UGC SPONSORED, DEPARTMENT OF MATHEMATICS, UNIVERSITY OF CALICUT	NATIONAL SEMINAR	23.3.2017 TO 25.3.2017
6	Bridge Course for MSc Students	Department of Mathematics		23.08.2017, 22.09.2017, 03.10.2017, 11.10.2017
7	Shasthrayan	Department of Mathematics		08.03.2018 to 09.03.2018
8	Pi Day Celebrations	Department of Mathematics		14.03.2018
9	Popular Lecture Series on History of Mathematics in India	Department of Mathematics		18.04.2018,

				25.04.2018, 02.05.2018, 09.05.2018, 16.05.2018, 23.05.2018, 23.06.2018
10	Bridge Course	Department of Mathematics		23.07.2018, 31.07.2018, 01.08.2018, 02.08.2018, 12.09.2018, 13.09.2018
11	Ramanujan Seminar	Department of Mathematics	University Level	15.09.2018

- Number of collaborations:
- Awards /recognitions received: International, National, State, University level.

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13, 14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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3	Latheesh Kumar A R	Total Domination Polynomials: a new approach	01.01.2012	28.12.2018
4	Vandana P T	A study on V4- Magic and Barycentric Ring Magic Graphs	19.06.2013	05.11.2018
5	Shyama M P	A study on some graph polynomials and its stability	13.11.2013	26.09.2018

- Number of students registered for Ph.D. degree: 7

Sl No	Name of the student	Topic of research	Date of registration
1	Libeesh Kumar K B	A Study on Magic Graphs	01.11.2012
2	Noushida P P	A Study on B Coloring of Graphs	21.03.2016
3	Neethu K T	A study of Cayley Fuzzy Graphs Induced by Loops and Quasigroups	18.04.2016
4	Fazil K	A Study on Properties of Spectrum and Energy Graphs	07.08.2018
5	Dhanya C	A Study on Graph polynomials	08.08.2018
6	Safeera K	Study on Vertex Transitive Graphs Which are not Cayley Graphs	02.12.2019
7	Anusha C	A Study on Detour Distance Magic Labeling of Graphs	03.02.2020

- Provide information as indicated in 11 and 12 above.
- Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.
- Innovative processes developed in teaching and learning.
- Participation in curricular development:
- Participation in co-curricular and extra-curricular activities.
- Refresher and Orientation courses attended:
- Examination /Evaluation reforms initiated:

- Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

Common neighbor polynomial of graphs, Far East Journal of mathematical sciences, Volume 102, Number 6, 2017, Pages 1201-1221.

Common neighbor polynomial of graph operations, Far East Journal of mathematical sciences, Volume 102, Issue 11, 2017, Pages 2629 -2641.

CN P -equivalent Classes of Graphs, South East Asian Journal of Mathematics and Mathematical Sciences, Vol.13, No.2, 2017, pages 75-84.

Cayley fuzzy graphs induced by loops, Far East Journal of Mathematical Sciences 102(6):1139-1163 · September 2017

Cayley Bipolar Fuzzy Graphs Induced By Loops, Global Journal of Pure and Applied Mathematics, Volume 13, Number 9 (2017), pp. 6681-6693

On the Stability of Common Neighbor Polynomial of some Graphs, South East Asian Journal of Mathematics and Mathematical Sciences, Vol.14, No.1, 2018, pages 95-102.

Common neighbor polynomial of some graph constructions, International Journal of Research in Advent Technology, Vol.6, No.11,2018, pages 3330-3334.

On the real roots of common neighbor polynomial of graphs, Journal of Applied Science and Computations, Vol.6, Issue 4, 2019, pages 1424-1431.

Generalized common neighbor polynomial of graphs, International Journal of Mathematical Combinatorics, Vol.3, 2019, pages 80-89.

Neighbourhood V4-magic labeling of some cyclereleted graphs, Far East Journal of Mathematical Sciences (FJMS), Volume 111, Number 2, 2019, Pages 263-272.

Neighbourhood V4-magic labeling of star and path related graphs, Journal of Discrete Mathematical Sciences & Cryptography, Volume 22 (2019), Number 6, Pages 10671076.

Neighbourhood V4-magic labeling of somegraphs, Far East Journal of Mathematical Sciences (FJMS), Volume 113, Number1, 2019, Pages 47-64.

Neighbourhood V4-magic labeling of somesplitting graphs, International Journal research in Advent technology, Volume 7, Number 1, January 2019, Pages 530-535.

Neighbourhood barycentric V4-magic labelingsof some graphs, International Journal of Research and Analytical Reviews, Volume6, Issue 1, February 2019, Pages 1350-1360.



Star magic labeling of some graphs, Far East Journal of Mathematical Sciences (FJMS), Volume 113, Number 2, 2019, Pages 209-219.

K. P. Vineesh and V. Anil Kumar, Neighbourhood V4-magic labeling of some shadow graphs, International Journal of Mathematical Combinatorics, Volume 2(2019), Pages 86-98.

Neighbourhood V4-magic labeling of some middle graphs, Malaya Journal of Matematik, Volume 8, Number 2 (2020), Pages 499-501.

Cayley Fuzzy Digraph Structure Induced by Groups, International Journal of Mathematical Combinatorics . 2020, 33-39.

Common neighbor polynomial of some special trees, Aegaeum Journal, Vol. 8, Issue 5, 2020.

Common neighbor polynomial of graphs and its significance in network data clustering, Journal of Xidian University, Vol. 14, Issue 4, 2020, 857-862.

Induced V 4 magic labelings of cycle related graphs, Malaya Journal of Mathematics, vol 8, no 2, 473-477, 2020

Induced magic labelings of some graphs, Malaya Journal of Mathematics, vol 8, no 1, 473-477, 2020

- Books published: with ISBN No., Without ISBN No., Chapters in books.
- Patents Applied/Granted: National. International, commercialized:
- Consultancy services provided and revenue generated:
- Conferences ,seminars, symposia and workshops organized as convener/coordinator:
- Number of collaborations:
- Awards /recognitions received: International, National, State, University level.

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13,14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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## Format for preparing the faculty profile:

(Provide the information for last three years  
from 2017-18 to 2019-20)

1. Name of the faculty: Raji Pilakkat
2. Name of the Department: Mathematics
3. Educational qualifications: M. Sc., M. Phil, Ph. D
4. Present position: Professor
5. Address for correspondence: Raji Sadan, P.O. Mannur, Kozhikode, 673328
6. E-mail and contact number: [rajipilakkat@gmail.com](mailto:rajipilakkat@gmail.com), 9947513828
7. Specialization: Functional Analysis and Graph Theory
8. Total teaching experience: 33 years
9. Courses taught: Algebra, Ordinary Differential Equations, Complex Analysis, Functional Analysis, Graph Theory, Research Methodology, Topology, Algebraic Topology, Differential Geometry, Real Analysis, Measure Theory, Domination in Graphs, Topological Vector Spaces, Topological Groups, Fourier Analysis
10. Research experience: 25 years
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.
12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.
13. Number of students awarded Ph.D. degree:

Sl No.	Name of the student	Topic of research	Date of registration	Date of declaration of Ph.D. degree
1	Seena V	Separation Axioms in Graphs & Hyper Graphs	02.02.2009	07.07.2017
2	Chithra K P	A study on Strength of Strong Fuzzy Graphs and Extra Strong K-Path Domination in Strong Fuzzy Graphs	01.01.2012	30.07.2019
3	Jisna P	Measurable Dominating Functions	15.01.2015	16.03.2019
4	Jalsiya M P	Cycle Tracking set of a graph	19.06.2013	28.05.2020

14. Number of students registered for Ph.D. degree:

Sl No	Name of the student	Topic of research	Date of registration
1	Annie Sabitha Paul	A study on mixed domination in graphs	02.03.2015
2	Reshmi K M	Strength of Fuzzy Graphs in networking problems	02.02.2017
3	Saleel Mohammed K	A study on Characteristic Polynomial and spectrum of graphs	15.12.2018
4	Midhun S	Studies on Domination and Spectrum of Graphs	04.01.2019

15. Provide information as indicated in 11 and 12 above.
16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person. - Annexure I
17. Innovative processes developed in teaching and learning.
18. Participation in curricular development: Participated a workshop conducted by the University
19. Participation in co-curricular and extra-curricular activities.
20. Refresher and Orientation courses attended:
21. Examination /Evaluation reforms initiated:
22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS. - Annexure II
23. Books published: with ISBN No., Without ISBN No., Chapters in books.
24. Patents Applied/Granted: National. International, commercialized:
25. Consultancy services provided and revenue generated:
26. Conferences, seminars, symposia and workshops organized as convener/coordinator: Annexure III
27. Number of collaborations:
28. Awards /recognitions received: International, National, State, University level.
  - i. Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13,14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

## Annexure -I

Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.

1. "Online Hands on Training Programme on Learning Management System-Moodle" Jointly organized by Department of Computer Science and IQAC, University of Calicut, during 25<sup>th</sup> May to 9<sup>th</sup> June 2020; Attended and successfully completed
2. UGC sponsored "Refresher Course in Mathematical Science"(9.12.2019-21.12.2019)" conducted by the HRDC, University of Calicut; Chaired a session and adjudicated the SeminarPaper presentations of Participants on 17.12.2019.
3. UGC sponsored "Refresher Course in Mathematical Science"(9.12.2019-21.12.2019)" conducted by the HRDC, University of Calicut; Resource Person on 17.12.2019.
4. Workshop for I MSc. Mathematics Students, prior to the Internship Programme; organized by the Department of mathematics, University of Calicut. During 2<sup>nd</sup> to 6<sup>th</sup> December 2019; Resource Person
5. "Two Day Foundation School in Mathematics for undergraduates" (27.11.2019-28.11.2019) sponsored by KSCSTE, Govt. of Kerala organized by Kerala School of Mathematics(KSOM) in association with Govt. Arts College, Meenchantha; Resource person
6. Awareness Programme on "Clean & Healthy Campus"; by Dr. E. Sreekumaran, Professor, Life Science, Univerty of Calicut on 5<sup>th</sup> August 2019; Participated
7. "National Seminar on Topology and analysis" organized by the Alumni of Department of mathematics, University of Calicut. on 8<sup>th</sup>,9<sup>th</sup> May 2019; Participated
8. Popular Lecture by Dr. Ramachandran P.T. in connection with Pi-Day Celebrations of theDepartment of mathematics, University of Calicut. on 14<sup>th</sup> March 2019; Participated
9. National Seminar on "Recent Trends in Topology"; organized by the Department of Mathematics, University of Calicut, on 7<sup>th</sup>, 8<sup>th</sup>and 9<sup>th</sup> Feb, 2019; Participated
10. "Ramanujan Seminar" organized by the Department of Mathematics, University of Calicut  
15.09. 2018; Participated
12. "29<sup>th</sup> Dr. P. Kesvava Menon Memorial Lectures", organized by the Department of Mathematics, in connection with the Golden jubilee celebrations of the University of Calicuton 15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> March 2018; Participated
13. "National Seminar on Topology and its Applications", organized by the Department ofMathematics, University of Calicut on 23-25 March 2017; Participated.

## Annexure -II

Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

SI. No.	Authors in Order and Title of Publication*	Journal Name, volume , Number, year & Digital object identifier(DOI) Number	International /National	Publisher with ISSN	Web Address on the Journal	Indexed by	Impact factor or if any
1	Jalsiya M.P. and Raji Pilakkat, "Cycle tracking polynomial of a graph"	Journal of Applied Science and Computations, Vol. IV, No. IV, 2019	International	ISSN No.1076-5131	<a href="http://j-asc.com/">http://j-asc.com/</a>	UGC Approved Journal-41238 (till-June 14-2019), Index Copernicus, Google scholar	5.8
2	Jalsiya M.P. and Raji Pilakkat, "Independent tracking polynomial of a graph"	Malaya Journal of Matematik, Vol. S, No. 1, 2019. <a href="https://doi.org/10.26637/MJM0S01/0082">https://doi.org/10.26637/MJM0S01/0082</a>	International	University Press Publishers , ISSN: 2319-3786	<a href="http://www.malayajournal.org/">www.malayajournal.org/</a>	Zentralblatt MATH , Universe Digital Library-Malaysia, Research Gate, IndianScience.in, Directory of Science, UGC Care list	
3	Jalsiya M.P. and Raji Pilakkat, "Transitively tracked graphs"	Malaya Journal of Matematik, Vol. S, No. 1, 2019. <a href="https://doi.org/10.26637/MJM0S01/0081">https://doi.org/10.26637/MJM0S01/0081</a>	International	University Press Publishers , ISSN: 2319-3786	<a href="http://www.malayajournal.org/">www.malayajournal.org/</a>	Zentralblatt MATH , Universe Digital Library-Malaysia, Research Gate, IndianScience.in, Directory of Science, UGC Care list	
4	Jalsiya M.P., Raji Pilakkat, "Track closure space generated by a graph"	International Journal of Research and Analytical Reviews (IJRAR), Vol.6, No. 1, 2019, <a href="http://doi.org/10.1729/Journal.19902">http://doi.org/10.1729/Journal.19902</a>	International	EISSN 52348-1269, P-ISSN 2349-5138	<a href="http://www.ijrar.org/">http://www.ijrar.org/</a>	UGC Approved Journal-43602 (till-June 14-2019), Index Copernicus, Google scholar	
5	Jalsiya M.P. and Raji Pilakkat, "Independent and Irredundant Cycle Tracking Sets of a Graph : An efficient approach to electrical circuit analysis"	Far East Journal of Mathematical Sciences (FJMS), Vol. 111, No. 2, 2019, <a href="http://dx.doi.org/10.17654/MS111020225">http://dx.doi.org/10.17654/MS111020225</a>	International	Pushpa Publishing House , India, ISSN: 0972-0871	<a href="http://www.pphmj.com">http://www.pphmj.com</a>	UGC Approved Journal-29237 (till-June 14-2019), Zentralblatt MATH , Index Copernicus, Google scholar	

6	Jalsiya M.P. and Raji Pilakkat, "Mixed Circuit Domination Number"	International Journal of Research in Advent Technology, Vol.6,No.10, 2018.	International	ISSN: 2321-9637	<a href="http://www.ijrat.org">http://www.ijrat.org</a>	UGC Approved Journal-48768 (till-June 14-2019), Index Copernicus, Google scholar	5.1 53
7	Jalsiya M.P. and Raji Pilakkat, "Total cycle tracking sets"	Far East Journal of Mathematical Sciences (FJMS) Volume 118, Issue 2, Pages 169 - 179 (September 2019) <a href="http://dx.doi.org/10.17654/MS118020169">http://dx.doi.org/10.17654/MS118020169</a>	International	Pushpa Publishing House , India, ISSN: 0972-0871	<a href="http://www.pphmj.com">http://www.pphmj.com</a>	UGC Approved Journal-29237 (till-June 14-2019), Zentralblatt MATH , Index Copernicus, Google scholar	
8	Jisna P and Raji Pilakkat "Measurable dominating Functions"	International Electronic Journal of Pure and Applied Mathematics, Volume 10, No.2, 2016, 167-176. : doi: 10.12732/iejpam.v12i1.9	International	Academic Publications ISSN:1314-0744.	<a href="https://www.e.ijpam.eu">https://www.e.ijpam.eu</a>	Zentralblatt MATH; MathSciNet, American Mathematical Society; Google Scholar.	.91
9	Jisna P and Raji Pilakkat "Neighborhood Sigma Algebras of Middle graph, Total graph and Join of Two Graphs"	Global Journal of Pure and Applied Mathematics. Volume 13, No.9, 2017, 6673-6680.	national	Research India Publications ISSN 0973-1768	<a href="http://www.ripublication.com/gjpam.htm">http://www.ripublication.com/gjpam.htm</a>	The GJPAM is abstracted and indexed in SCOPUS(2010-2016), the Mathematical Reviews, MathSciNet, and EBSCO Databases, ICI, Index Copernicus.	
10	Jisna P and Raji Pilakkat "Measurable Signed Dominating Functions"	- Bulletin of Kerala Mathematics Association. Volume 15, No.2, (2017, December) 165-171	International	ISSN: 0973-2721	<a href="http://www.keralamathematicalassociation.in">http://www.keralamathematicalassociation.in</a>	Kerala Mathematical Society and Calcutta Mathematical Society	
11	Jisna P and Raji Pilakkat "Neighborhood sigma algebra of graph products"	International Electronic Journal of Pure and Applied Mathematics Volume 12 No. 1 2018, 123-128 ISSN: 1314-0744 doi: 10.12732/iejpam.v12i1.9	International	ISSN: 1314-0744	<a href="https://www.e.ijpam.eu">https://www.e.ijpam.eu</a>	Zentralblatt MATH; MathSciNet, American Mathematical Society; Google Scholar.	.91

12	Jisna P and Raji Pilakkat” Sections of measurable”functions	Far East Journal of Mathematical Sciences. Volume 109, No. 1, (2018), 117-127.	International	Pushpa Publishing House, India,ISSN: 0972-0871.	<a href="http://www.pphmj.com">http://www.pphmj.com</a>	UGC Approved Journal-29237 (till-June 14-2019), Zentralblatt MATH , Index Copernicus, Google scholar	
13	Seena V and Raji Pilakkat”T1 Hypergraphs”	Global Journal of Pure and Applied Mathematics. Volume 13, Number 10 (2017), pp. 7467–7478	National	Research India Publications ISSN 0973-1768	<a href="http://www.ripublication.com/gjpam.htm">http://www.ripublication.com/gjpam.htm</a>	The GJPAM is abstracted and indexed in SCOPUS(2010-2016), the Mathematical Reviews, MathSciNet, and EBSCO Databases, ICI, Index Copernicus	
14	Seena V and Raji Pilakkat T0 Hypergraphs	Global Journal of Pure and Applied Mathematics. Volume 13, Number 10 (2017), pp. 7453–7466	National	Research India Publications ISSN 0973-1768	<a href="http://www.ripublication.com/gjpam.htm">http://www.ripublication.com/gjpam.htm</a>	The GJPAM is abstracted and indexed in SCOPUS(2010-2016), the Mathematical Reviews, MathSciNet, and EBSCO Databases, ICI, Index Copernicus	
15	Seena V and Raji Pilakkat “Hausdorff Hypergraphs”	Bulletin of Kerala Mathematical Association 15(1) 33-45	International	ISSN: 0973-2721	<a href="http://www.keralamathe-matical-association.in">http://www.keralamathe-matical-association.in</a>		
16	Seena V and Raji Pilakkat “T1 property of different products of graphs”	Bulletin of Kerala Mathematical Association, 13(2), (2016), 251-257	International	ISSN: 0973-2721	<a href="http://www.keralamathe-matical-association.in">http://www.keralamathe-matical-association.in</a>		
17	Seena V and Raji Pilakkat “Hausdorff property of Cartesian and Wreath Product of Hypergraphs”	International Journal of Applied Mathematics, 29(3), (2016), 389-394.  DOI: 10.12732/ijam.v29i3.10	International	pISSN 1311-1728, eISSN 1314-8060	<a href="http://www.diogenes.bg">http://www.diogenes.bg</a>	Math. Reviews and MathSciNet (1999-2018).Zentralblatt Math. (1999-2016);Indexed also in: AMS Digital Mathematics Registry, British Library Direct, Google Scholar, and other World databases.	.27
18	Seena V and Raji Pilakkat “Hausdorff Property of Some Derived Graphs”	Far East Journal of Mathematics, 100(7), (2016), 1017-1030. <a href="http://dx.doi.org/10.17654/MS100071017">http://dx.doi.org/10.17654/MS100071017</a>	International	Pushpa Publishing House , India, ISSN: 0972-0871	<a href="http://www.pphmj.com">http://www.pphmj.com</a>	UGC Approved Journal-29237 (till-June 14-2019), Zentralblatt MATH , Index Copernicus, Google scholar	h-index 24

19	Seena V and Raji Pilakkat "Hausdorff Property of Lexicographic, Co-normal and Homomorphic product of Graphs"	Far East Journal of Mathematics, 100 (2), (2016), 243-254. <a href="http://dx.doi.org/10.17654/MS100020243">http://dx.doi.org/10.17654/MS100020243</a>	International	Pushpa Publishing House , India, ISSN: 0972-0871	<a href="http://www.pphmj.com">http://www.pphmj.com</a>	UGC Approved Journal-29237 (till-June 14-2019), Zentralblatt MATH , Index Copernicus, Google scholar	h-index 24
20	T0 Graphs	International Journal of Applied Mathematics, 29(1), (2016), 145-153	International	pISSN 1311-1728, eISSN 1314-8060	<a href="http://www.diogenes.bg">http://www.diogenes.bg</a>	Math. Reviews and MathSciNet (1999-2018).Zentralblatt Math. (1999-2016);Indexed also in: AMS Digital Mathematics Registry, British Library Direct, Google Scholar, and other World databases.	
21	Annie Sabitha Paul and Raji Pilakkat, "A note on T0 domination"	International Journal of Research in Advent Technology, Vol.7, No.2, February 2019, pp 120-125. DOI:10.32622/ijrat.72201932	International	ISSN 2321-9637 (online)	<a href="http://www.ijrat.org">http://www.ijrat.org</a>	UGC listed - old list	.27
22	Annie Sabitha Paul and Raji Pilakkat, "On cycle neighbor equivalence and cycle neighbor roots of a graph"	Malaya Journal of Matematik, Vol. S, No. 1, Pages 27-31, 2020. DOI: 10.26637/MJM0S20/0006	International	ISSN (Print) : 2319 - 3786 ISSN (Online) : 2321 - 5666	<a href="http://www.malayajournal.org">http://www.malayajournal.org</a>	UGC care listed - group - I	
23	Annie Sabitha Paul and Raji Pilakkat, "Modified cycle neighbor polynomial of graphs"	Advances in Mathematics Scientific Journal Vol.9, Issue 10, 2020, pp 8883-8889 DOI: <a href="https://doi.org/10.37418/amsj.9.10.11">https://doi.org/10.37418/amsj.9.10.11</a>	International	1857-8365 (print) 1857-8438 (online)	<a href="http://www.iferp.in">http://www.iferp.in</a>	ugc listed - group - II Scopus indexed	



24	Annie Sabitha Paul and Raji Pilakkat, "Cycle neighbor polynomial of some graph operations"	Malaya Journal of Matematik, Vol.8, Issue 4, 2020, pp 1703-1707 DOI: 10.26637/MJM0804/0064.	International	ISSN (Print) : 2319 - 3786 ISSN (Online) : 2321 - 5666	<a href="http://www.malayajournal.org">http://www.malayajournal.org</a>	UGC care listed - group - I	
25	Annie Sabitha Paul and Raji Pilakkat, "Cycle neighbor polynomial of graphs" ,.	Communications in Mathematics and Applications, Vol.11, Issue 4, 2020, pp 549-558 DOI: 10.26713/cma.v11i4.1441	International	eISSN 0975-8607; pISSN 0976-5905	<a href="http://www.rgnpublications.com">http://www.rgnpublications.com</a>	UGC care listed - group - II WoS indexed	
26	Reshmi K M and Raji Pilakkat "Transit index of a graph and its correlation with MON of octane isomers"	Advances in Mathematics: Scientific Journal (electronic) 19 (2020), no.4, 1825-1833 <a href="https://doi.org/10.37418/amsj.9.4.39">https://doi.org/10.37418/amsj.9.4.39</a>	International	ISSN 1857-8438	<a href="https://doi.org/10.37418/amsj.9.4.39">https://doi.org/10.37418/amsj.9.4.39</a>	Referred journal	
27	K. M. Reshmi and Raji Pilakkat "Transit index of various graph classes"	Malaya Journal of Matematik	ISSN (Print) : 2319 - 3786 ISSN (Online) : 2321 - 5666	<a href="http://www.malayajournal.org">http://www.malayajournal.org</a>	UGC care listed - group - I	UGC care listed - group - I	

### Annexure -III

#### Conferences, seminars, symposia and workshops organized as convener/coordinator:

- National Seminar on "Analysis and Geometry" conducted by Department of Mathematics, University of Calicut from 06.03.2020 to 07.03.2020.
- Bridge course for the I Semester M. Sc. Students (2020admn) during the academic year 2020-21.