



1. Name (Block Letters) : Mrs. R. Sumathi
2. Designation : Assistant Professor
3. D.O.J : 20.08.2018
4. Mobile Number : 9941562915
5. Mail ID : sumathi@mannarcollege.ac.in
6. Field of Specialization : Graph Theory
7. Qualification : M.Sc., M.Phil., (Ph.D)

Ph.D Registered (year) : 2020

SET/NET passed (year) :2017

8. Teaching Experience

Till this year : 22 years 10 months

a. UG : 22 years 10 months

b. PG : 17 years 10 months

9. Grants received from Government & Non-government sources such as industry, corporate houses, international bodies, endowments etc...: 1

- Project Co-ordinator and organized National Mathematics Day Celebration on 21st & 22nd December 2022 Funded as a sum of amount 2 lakhs by National Council for science and Technology Communication (NCSTC), Tamilnadu State Council for Science and Technology.

10. Details of Seed Money received from the institution for institutional sponsored Faculty / Interdepartmental / Students Project :1

- Received Rs. 20, 000/- for the Seed Money Project titled “A New Domination-Vedic Perspective in Medical Image Processing” during 2020.

11. Papers Presented in Conferences / Seminars :

- Presented a paper titled “Computer Aided Skin Disease Detection and Classification” in the National E-Conference On Hardware Security- NCHS20 organized by AVIT, Chennai during 25.06.2020 & 26.06.2020.

- Presented a paper titled “An Effective Automatic Skin Disease Identification Using Vedic Maths” in the International Conference On Applied Mathematics & Civil Structures (ICAMCS 2021) organized by Department Of Mathematics & Department Of Civil Engineering, Sri Sivasubramaniya Nadar College Of Engineering, Chennai during 12.02.2021 & 13.02.2021.
- Presented a paper titled “A Relative Study Of Real World Complex Networks Using Heatmap Centrality” in Two-Day International Conference On Exploration Of Contemporary Mathematical Sciences – 2022 (ICECMS – 2022) organized by Department Of Mathematics(CA), Mannar Thirumalai Naicker College, Madurai during 17/03/2022 & 18/03/2022.
- Presented a paper titled “A Study on Point Set Domination in Graphs” in the Conference On “Recent Trends In Graphs And Networks In Digital World” organized by Department Of Mathematics, HKRH College, Uthamapalayam on 03.03.2023.
- Presented a paper titled “Accurate Point Set Distribution and Connected Accurate Point Set Distribution” in the National Conference on “Applications of Mathematics in Digital Era” organized by Department Of Mathematics, HKRH College, Uthamapalayam on 06.10.2023.
- Presented a paper titled “Analysis of Water Distribution Networks using Heatmap Centrality Measure” in the National Conference On “Recent Advancements in Pure and Applied Mathematics (RAPAM-2024)” organized by PG and Research Department Of Mathematics, Mannar Thirumalai Naicker College, Madurai during on 15.03.2024.
- Presented a paper titled “Strong Split Point Set Domination and Super Point Set Domination in Graphs” in the National Conference On “Recent Advancements in Pure and Applied Mathematics (RAPAM-2024)” organized by PG and Research Department Of Mathematics, Mannar Thirumalai Naicker College, Madurai during on 15.03.2024.

12. Details of Paper Publications:

- A Study On Facts, Causes And Consequences Of Divorce Using Fuzzy Cognitive Maps in International Journal of Engineering Research and Technology, ISSN 2278-0181, IJAMM-2501, August 2013.
- Preferring old age home: A Fuzzy Approach using Extended, Mathematical Sciences International Research Journal, ISSN 2278-8697, Vol – 3, Issue 2, Pg.No.694 – 697, 2014.
- A new fuzzy clustering method based on fuzzy equivalence relation, IPASJ International Journal of Computer Science, ISSN 2321-5992, Vol – 3, Issue 2, Pg.No.694 – 697, December 2014.

- Application of Three estimates Fuzzy TOPSIS [TEFTOPSIS] Method using Pentagonal Fuzzy Number in Analysing the Causes for increase in Old Age Home, International Journal of Advanced Research in Computer Science, ISSN 0976-5697, Vol -6, Issue 2, p77-83, Mar/Apr2015.
- Predominant Factor Prediction To Accelerate Growth Of Quick-Service Restaurants (QSR), International Journal of Scientific & Technology Research, ISSN 2277-8616, Volume 9, Issue 04, April 2020.
- An Effective Automatic Breast Cancer Identification using Vedic Mathematics, Materials Today: Proceedings – Elsevier, ISSN 2214-7853, Volume 47, Part 1, 2021, Pages 247-250, 2021.
- Challenges Faced by the Food Industry under Franchising Sector, Materials Today: Proceedings – Elsevier, ISSN 2214-7853, Volume 55, Part 2, 2022, Pages 299-305, 2022.
- Maximal point set domination in graphs, Discrete Mathematics, Algorithms and Applications, <https://doi.org/10.1142/S1793830924500149>
- Analysis of Water Distribution Networks using Heatmap Centrality Measure, Indian Journal of Natural Sciences, ISSN: 0976 – 0997, Vol.15 / Issue 84 / Jun / 2024.
- “Strong Split Point Set Domination and Super Point Set Domination in Graphs” Indian Journal of Natural Sciences, ISSN: 0976 – 0997, Vol.15 / Issue 85 / Aug / 2024.

13. Chapters in edited volumes :

- Chapter Women Mathematicians in 21st Century, Women in 21st Century, Neithal Pathippagam, Chennai, ISBN 978-93-90687-63-3, 2021.

14. Special Address Delivered :

- Delivered a lecture on Speed and Mind Math Tricks, in Three Days State Level Technical Workshop “Math Teachers Training Through Low Cost Teaching Aids”, jointly organized by National Council for Science and Technology Communication, TamilNadu State Council for Science and Technology, MannarThirumalaiNaickar College, Madurai on 07.07.2022

15. Details of Workshops / Seminars / Conference attended :

| S.No | Name of the Programme | Name of the Institution | Date |
|------|---|------------------------------------|------------|
| 1. | Mathematical Methods & Fuzzy Applications | Jamal Mohamed College | 27/02/2006 |
| 2. | Patent Awareness | Mohamed Sathak Engineering College | 5/04/2006 |
| 3. | Recent Trends in | Easwari Engineering College | 15/10/2010 |

| | | | |
|-----|---|--|--------------------------|
| | Advanced Mathematics | | |
| 4. | Computational Methodologies in Statistics | Pondicherry University | 19/01/2011 to 21/01/2011 |
| 5. | Applied Multivariate Statistical Analysis using SPSS and AMOS | Presidency College | 4/03/2011 & 5/03/2011 |
| 6. | Using Sage For Engineering Mathematics | VIT | 28/04/2012 |
| 7. | Discrete Mathematics | Tagore Engineering College | 7/09/2012 |
| 8. | Recent Advances in Mathematics and its Applications | Loganatha Narayanasamy Government College | 13/12/2012 & 14/12/2012 |
| 9. | Probability and Queueing Theory | KCG College of Technology | 15/10/2014 & 16/10/2014 |
| 10. | Fuzzy Theory and its Applications | KCG College of Technology | 24/07/2018 & 25/07/2018 |
| 11. | Discrete Mathematics and Graph Theory | Sairam Institute of Technology | 25/07/2018 |
| 12. | Graph theory and Discrete Mathematics | KCG College of Technology | Aug 2015 |
| 13. | Outcome Based Education | KCG College of Technology | 30/06/2016 & 01/07/2016 |
| 14. | Values and Spirituality for EXCELLENCE in Teaching Profession | HappyVillage Retreat Center | 09/07/2016 & 10/07/2016 |
| 15. | Quantitative Aptitude Training | KCG College of Technology | 28/08/2016 |
| 16. | IOT training on Intel Galileo board | KCG College of Technology | Nov 2016 |
| 17. | International Conference on "Revolutionary Trends | Mannar Thirumalai Naicker College, Madurai | 14.12.2018-15.12.2018 |

| | | | |
|-----|---|--|-------------------------|
| | in Mathematical Sciences” | | |
| 18. | Technicalities of Writing Research Proposal | Mannar Thirumalai Naicker College, Madurai | 29.06.2019 |
| 19. | Outcome Based Education | Mannar Thirumalai Naicker College, Madurai | 28.08. 2019 |
| 20. | Research writing and Publication: Theory and Practice | Mannar Thirumalai Naicker College, Madurai | 19.10.2019 |
| 21. | National Seminar on “Applied Mathematics & IPR” | Mannar Thirumalai Naicker College, Madurai | 20.12.2019 |
| 22. | Promotion of API Score and CAS requirements | Mannar Thirumalai Naicker College, Madurai | 03.03.2020 |
| 23. | Self-Development | Sri Sarada Niketan College of Science for Women, Karur | 20/04/2020 & 21/04/2020 |
| 24. | Creation of E-Content, Animated E-Content, Stop Motion Animation, Editing E-Content, Creating Interactive E-Content and Uploading E-Content on the Web. | Universal Teachers Academy, Puducherry, India | 21/4/ 2020 - 30/4/ 2020 |
| 25. | Research Outcomes: Technical Paper writing, Research Proposal, Patent Filing | The Data Tech.ai | 22/4/2020 |
| 26. | Covid -19 Pandemic General Awareness Quiz | Potti Sriramulu Chalavadi Mallikarjuna Rao College of Engineering & Technology, Vijayawada, Andhra Pradesh | 26/4/2020 |
| 27. | Online Assessment on Improve your Skills | Virudhunagar Hindu Nadars’ Senthikumara Nadar College, Virudhunagar | 27/4/ 2020 – 29 /4/2020 |
| 28. | Online College Management & Online Content Creation Tools | BMM & BAMMC Department of Lala Lajpati Rai College of Commerce & Economics and University of Mumbai with North Storm Academy | 30/4/2020 – 2/5/2020 |
| 29. | Online Quiz Competition on Effective Teaching – 2020 | S.S. Duraisami Nadar Mariammal College, Kovilpatti | 3/5/2020 |
| 30. | Documentation using LATEX | Arasu College of Arts & Science for Women, Karur | 4/5/2020 |
| 31. | Data Analysis & Visualisation of COVID-19 | Jerusalem College of Engineering, Chennai | 7/5/2020 |
| 32. | E-Quiz on Impact of COVID-19 on Global | Khadir Mohideen College, Thanjavur | 11/05/2020 |

| | | | |
|-----|--|---|-------------------------|
| | Economy | | |
| 33. | Mathematics E-Quiz | Sengunthar Arts and Science College, Namakkal | 25/5/2020 |
| 34. | Positive Thought and the Ideal Life | Mannar Thirumalai Naicker College, Madurai | 28.05.2020 |
| 35. | Algebraic Graph Theory | Government Arts College for Men, Nandanam, Chennai | 1/6/2020 |
| 36. | E-Quiz on Mathematics | Rohini College of Engineering & Technology, Kanyakumari. | 03/06/2020 |
| 37. | Mathematical Analysis | Loyola College, Chennai | 08/06/2020 – 13/06/2020 |
| 38. | Fuzzy Logic and It's Applications | Rohini College of Engineering & Technology, Variyoor, Kanyakumari | 12/6/2020 |
| 39. | E-Quiz on Graph Theory | The Madurai Diraviyam Thayumanavar Hindu College, Tirunelveli | 13/6/ 2020 & 14/6/2020 |
| 40. | Application of Stochastic Process in Real World Problems and Graph Theory in Secured Data Transmission | Sri Akilandeswari Women's College, Wandiwash, Thiruvannamalai | 16/6/2020 |
| 41. | Graph Embedding | Don Bosco College of Arts and Science, Keela Eral, Thoothukudi | 16/6/2020 |
| 42. | Fuzzy Mathematical Modelling | St. Joseph's College of Engineering, Chennai | 16/6/ 2020 - 17/6/2020 |
| 43. | Edge Colouring in Graphs | Pope's College, Samyerpuram | 18/6/2020 |
| 44. | Recent Trends in Graph Theory | Government Arts College, Ramanathapuram | 22/06/2020 – 24/06/2020 |
| 45. | Coloring of Graphs | Tirumala Engineering College, Guntur, Andra Pradesh | 26/6/2020 |
| 46. | Recent Trends in Mathematical Modelling | Mannar Thirumalai Naicker College, Madurai | 27/06/2020 |
| 47. | Basic Graph Theory with GRIN | Rajalakshmi Engineering College, Chennai | 1/07/2020 |
| 48. | Graph Theory and its Applications | Islamiah Women's Arts and Science College, Vaniyambadi. | 2/07/2020 - 3/07/2020 |
| 49. | Rough Set: A Tool for Qualitative Knowledge Data Discovery | Yadava College, Madurai | 4/07/2020 |
| 50. | Blended Learning and Mathematical Relevance to Real World Applications | Anwarul Uloom College, Hyderabad, Telangana. | 05/07/2020 |
| 51. | Applications of Number Theory and Cryptography | Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana. | 08/07/2020 |
| 52. | Soft_Computing by Soft Sets | Don Bosco College of Arts and Science, Thoothukudi. | 10/07/2020 |
| 53. | Statistical Analysis As An Interface In Engineering Problems | Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana. | 13/07/2020 |

| | | | |
|-----|---|--|--------------------------|
| 54. | Discrete Mathematics | SSN College of Engineering, Chennai | 08/08/2020 |
| 55. | Conference Emerging Trends in Vedic Mathematics & Application in Science, Technology & Social Science Research | Special Centre for E-Learning Jawaharlal Nehru University, New Delhi | 16.08.2020 & 17.08.2020 |
| 56. | Conference on “Graph Labelling and Application” | Goa University, Goa | 17.09.2020 - 19.09.2020 |
| 57. | Online webinar | MannarThirumalai Naicker College, Madurai | 23.07.2021 |
| 58. | National Conference on Present Scenario in Mathematical Research | Mannar Thirumalai Naicker College , Madurai | 22.04.2022 |
| 59. | Faculty Enhancement Programme on Education 4.O for Sustainable Economic Development | MannarThirumalai Naicker College, Madurai | 27.04.2022 |
| 60. | A Seven Day Online Faculty Development Programme on Enhancing Quality by unearthing Innovative Practices-EQUIP 2022 | MannarThirumalai Naicker College, Madurai | 18.04.2022 to 24.04.2022 |
| 61. | Two days In-service Teacher Training programme | Sri Meenakshi Government Arts College for Women, Madurai | 05.05.2022 & 06.05.2022 |
| 62. | National Conference on Current Trends in Applied Mathematics & IPR | Mannar Thirumalai Naicker College , Madurai | 07.10.2022 |
| 63. | Insights of National Educational Policy | Mannar Thirumalai Naicker College , Madurai | 18.03.2023 |
| 64. | Recent Trends in Graphs and Networks in Digital World. | Hajee Karutha Rowther Howdia College , Uthamapalayam | 30.03.2023 |
| 65. | National Virtual Workshop on Machine Learning: An Ice Breaker Between Materials Research and Data Science | SSN Research Centre, SSN Institutions Chennai. | 12.04.2023 & 13.04.2023 |
| 66. | State Level Technical Workshop on Intellectual Property rights | Mannar Thirumalai Naicker College, Madurai | 16.10.2023 & 17.10.2023 |

16. Details of Professional development Programmes attended :

| S. No | Name of the Professional Development Programme | Date and No. of Days | Name and address of the Institution imparting training |
|-------|---|---|--|
| 1. | Refresher Course on "Mathematics" | 14 days, 04.02.2022 – 17.02.2022 | UGC, HRDC, University of Kerala, Trivandrum |
| 2. | Faculty Induction Programme | 30 days/ 18.11.2020 to 17.12.2020 | UGC- HRDC ,Bharathidas an University, Trichy |
| 3. | Faculty Development Programme on "Promotion of API Score and CAS Filling" | 1 day/ 02.03.2019 | Mannar Thirumalai Naicker College, Madurai |
| 4. | Outcome Based Curriculum | 1 day/ 09.03.2019 | IQAC, MTNC |
| 5. | Faculty Induction Programme | One month /23.4.19–22.5.19 | Gandhigram Sural Institute, Gandhigram |
| 6. | E-content Development and Digital tools usage | 1 day/29.02.2020 | IQAC, MTNC |
| 7. | 21 st Century Skills | 1 day/05.03.2020 | IQAC, MTNC |
| 8. | Quality Assurance and Sustenance in Higher Education | 1 day/11.03.2020 | IQAC, MTNC |
| 9. | Faculty Enrichment Program | 1 week / 13.5.20 to 19.5.20 | IQAC, MTNC |
| 10. | Faculty Development Programme on "R Programming" | 3 days /14.05. 2020- 16.05.2020 | Sona College of Technology and Spoken Tutorial Project, IIT Bombay & MHRD Govt. of India |
| 11. | Training on "LaTeX" | 15.05.2020 | Sree Narayana Guru College and Spoken Tutorial Project, IIT Bombay & MHRD Govt. of India |
| 12. | Faculty Research Program: Dynamics in Research Publications | 2 days / 15 & 16.09.2022 | IQAC, MTNC |
| 13. | Latex | 18 th – 23 rd July 2022. | IQAC & Department of Commerce ,SSC College of Arts and Commerce, Ulhasnagar, Thane |

| | | | |
|-----|--|------------------------------------|--|
| 14. | Dynamics on Research Publications | 15&16 th September 2022 | IQAC & Research Committee, MTNC |
| 15. | Two days In-service Teacher Training programme | 05.05.2022 & 06/05/2022 | Sri Meenakshi Government Arts College for Women, Madurai |
| 16. | Modern Algebra | 12 Weeks / March 2021 | SWAYAM ONLINE COURSE, MKU |
| 17. | Advanced Graph Theory | 8 Weeks/ April 2022 | IIT, Patna- NPTEL |

17. Conferences, Seminars, Workshops and other Programmes Organized:

| S. No | Date | Name of the Programme | Role | Name of the Institution |
|-------|-------------------------|---|----------------------|--|
| 1. | 15/10/2014 & 16/10/2014 | State Level Two day FDP on “Probability and Queueing Theory” | Organizing Secretary | KCG College of Technology, Chennai |
| 2. | 24/07/2015 & 25/07/2015 | National Conference on Fuzzy Theory and Applications | Organizing Secretary | KCG College of Technology, Chennai |
| 3. | 30/06/2016 & 1/07/2016 | Two days FDP on Graph theory and Discrete Mathematics | Organizing Secretary | KCG College of Technology, Chennai |
| 4. | 29/06/2018 | One day workshop on Linear Algebra | Convenor | KCG College of Technology, Chennai |
| 5. | 20.12.2019 | National Seminar on Applied Mathematics & IPR | Co-Convenor | Mannar Thirumalai Naickar College, Madurai |
| 6. | 16.03.2020 | One Day Hands– on Workshop on “Research Documentation Using LaTeX” | Convenor | Mannar Thirumalai Naickar College, Madurai |
| 7. | 23.07.2021 | International Webinar on “ Data Science In E-commerce” | Convenor | Mannar Thirumalai Naickar College, Madurai |
| 8. | 22.03.2022 | Seminar on “Global Trends in Mathematical Modeling and Patent Filing” | Convenor | Mannar Thirumalai Naickar College, Madurai |
| 9. | 22.12.2022 | Celebration of “National Mathematics Day” | Convenor | Mannar Thirumalai Naickar College, Madurai |
| 10. | 22.02.2024 | MATH MAESTRO 2024” - Intercollegiate Meet | Organizing Secretary | Mannar Thirumalai Naickar College, Madurai |
| 11. | 15.03.2024 | Recent Advancements in Pure and Applied Mathematics (RAPAM-2024) | Organizing Secretary | Mannar Thirumalai Naickar College, Madurai |

18. Other Services Rendered in the College :

| S. No | Name of the Activity | Period |
|-------|---|----------------------------------|
| 1. | Handled Certificate Course “Vedic Mathematics-I” | 2019-2020 & 2021-2022 |
| 2. | Member of Career Guidance, Placement Cell and Centre for Competitive Examinations | 2019-2020, 2020-2021 |
| 3. | Member of Attendance Monitoring Committee | 2019-2020, 2020-2021 & 2022-2023 |
| 4. | In charge for the Department Student Activities | From September 2018 to till date |
| 5. | Coordinator for Counselling and Psychotherapy (Community College) | 2020-2021 |
| 6. | Member of ECO Club | 2021-2022 & 2022-2023 |
| 7. | Member of Women’s Development Cell | From July 2023 |
| 8. | Convenor of Internship Cell | From July 2023 |
| 9. | Member of Research Committee | From July 2023 |

OTHER PARTICULARS

| S.No | Stock Verification Committee | Position | Year |
|------|------------------------------|----------|------------------------|
| 1. | Physics Laboratory | Member | 2018-2019 |
| 2. | Physical Education | Member | 2019-2020 |
| 3. | Chemistry Laboratory | Member | 2020-2021 |
| 4. | Chemistry Laboratory | Convener | 2021-2022 |
| 5. | Library | Member | 2022- 2023 & 2023-2024 |

21. Membership in Academic / Professional Bodies

| S.No | Name of the Body | Capacity |
|------|------------------|----------|
| 1 | ISTE | Lifetime |

Signature of the Faculty