

**Name** : Dr. J.Rejula Mercy

**Designation** : Assistant Professor

**Department** : Mathematics (UG – SF)

**Qualification** : M.Sc., M.Phil.,B.Ed.,Ph.D.

**Experience** : Teaching -15 Years

**Research** : 6 Years

**Area of Specialization(s)** : Optimization

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#### Academic Qualifications

Degree	Branch	Institution/ University Name	Year of Graduation
Ph.D.	Mathematics	Karunya Institute of Technology and Sciences, Coimbatore	2022
B.Ed.	Mathematics	Dr.N.G.P. College of Education, Coimbatore	2009
M.Phil.	Mathematics	PSGR Krishnammal College for Women, Coimbatore	2008
M. Sc.	Mathematics	PSGR Krishnammal College for Women, Coimbatore	2007
B.Sc.	Mathematics	Nirmala College for Women, Coimbatore	2005

#### Additional Qualifications

Diploma/ Vocational/ Certification	Area of Specialization	Institution/University/AgencyName	Year
Certification	Coursera	What is Data Science?, IBM Skills Network	2022
Certification	Coursera	IBM Data Topology, IBM	2022
Certification	Coursera	Cryptography, University of Maryland	2023
Certification	Coursera	AI for Everyone, Deeplearning.AI	2023
Certification	Coursera	Operations Research: Models and Applications, National Taiwan University	2023
Certification	Coursera	Python for Data Science, AI & Development, IBM	2025
Certification	Coursera	Business Analytics using Excel, CBAP	2025
Certification	Coursera	Math Prep: College & Work Ready, UNT	2025

#### Research Publications (Indexed)

- Weight minimization of a hollow shaft using non-traditional optimization, Rejula Mercy.J,S. Elizabeth Amudhini Stephen, AIP Conference Proceedings , Volume 2670, Year 2022, Pages 050005 1-5 (SCOUPUS).

- Design optimization of a hollow shaft through MATLAB and simulation using ANSYS, Mercy J.R.;Stephen S.E.A.;Edna K.R.J., Coupled Systems Mechanics, Volume 11, Year 2022, Pages 259-266, (SCOUPUS).
- Optimization of Weight of a belt-Pulley Drive Using Alo, Gwo, Da, Fa, Fpa, Woa, Cso, Ba, Pso and Gsa, Rejula Mercy. J, S. Elizabeth Amudhini Stephen, Turkish Journal of Computer and Mathematics Education, Volume Vol.12 No.11 (2021), Year 2021, Pages, 1820-1824.
- Volume minimization of a closed coil helical spring using alo, GWO, DA, FA, FPA, WOA, CSO. BA, PSO and GSA, Rejula Mercy. J., S. Elizabeth Amudhini Stephen., Mathematics and Statistics, Volume 9, Year 2021, Pages 273-277, (SCOUPUS).
- A critical study on ten nontraditional optimization methods in solving engineering problems, Rejula Mercy J.;Elizabeth Amudhini Stephen S., International Journal of Mechanical Engineering and Technology, Volume 9, Year 2018, Pages 233-249, (SCOUPUS).

### **Paper Presentations in Conference**

- Presented a paper titled “Analytical solution of a slider bearing with a third grade fluid as lubricant” in the national level conference on “Mathematical Science and Applications” on 14<sup>th</sup> and 15<sup>th</sup> March 2013 at Karunya University, Coimbatore.
- Presented a paper titled “Dufour and Soret Effect on Steady MHD Flow in Presence of Heat Generation and Magnetic Field past an Inclined Stretching Sheet” in the National Conference on Recent Advances In Graph Theory And Operator Theory on 1<sup>st</sup> march 2014 at Dr. SNS Rajalakshmi College of Arts and Science, Coimbatore.
- Presented a paper titled “Optimization of a Hollow shaft using ALO, GWO, DA, FA,FPA, WOA, CSO, BA, PSO and GSA” in the International level conference on. “First Internatinal Conference on Applied Science Mathematics and Statistics” [ICASMS-21] on 9.4.2021 at Kongunadu college of engineering and technology, Coimbatore.
- Presented a paper titled “Weight Minimization of a Hollow Shaft using ALO, GWO, DA, FA, FPA, WOA, CSO, BA, PSO AND GSA” in the International Conference on Mathematical Modelling, Applied Analysis and Computation-2021, ICMMAAC-21 on 5-7 august 2021at JECRC University, Jaipur.
- Presented a paper titled “Weight minimization of a hollow shaft using ALO, GWO, DA, FA, FPA, WOA, CSO, BA, PSO and GSA” in the International Conference on Robotics, Automation, and Intelligent Systems (ICRAINS-21) on 12th and 13th November 2021 at Karunya Institute of Technology and Sciences, Coimbatore.

### **Participation in Conference**

- Participated in the National conference on advances in mathematical analysis and applications, KSR college of arts and science, 12.08.11-13.08.11.
- Participated in the national level conference on “Mathematical Science and Applications” on 14th and 15th March 2013 at Karunya University, Coimbatore.
- National Conference on Recent Advances in Graph Theory and Operator Theory, Dr. SNS Rajalakshmi College of Arts and Science, 01/03/2014.
- Participated in the National conference on “Mathematics and Computer Techniques in Industries” on 22nd and 23rd march 2016 at PSGR Krishnammal College for women, Coimbatore.
- Participated in the International Conference on Renewable Energy and Environment, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, 15/12/2016.
- First International Conference on Applied Science Mathematics and Statistics, kongunadu college of engineering and technology, 09/04/2021 - 09/04/2021
- Two-Day Virtual International Conference on Interdisciplinary Research in Social Sciences, Sciences and Technology 2021, 21/05/2021 - 22/05/2021.
- International Conference on “Recent Trends in Theoretical and Computational Mathematics”, PSGR Krishnammal College for Women, 24<sup>th</sup> & 25<sup>th</sup> Feb 2022.

- International Conference on “Mathematical Analysis in Computational Biology and Data Science”, PSGR Krishnammal College for Women, 24<sup>th</sup> & 25<sup>th</sup> Jan 2023.

### Participation in Seminars

- Participated in the National level seminar “The Echo of Mathematics” on 29th January 2008 at Nirmala college for women.
- Participated in the state level seminar on “Total Quality Management in Teacher Education” on 14th December 2008 at Dr.N.G.P. College of Education, Coimbatore
- Participated in the National seminar on “Vision Nano‘2015” on 21st February 2015 at Sri Ramakrishna Engineering college, Coimbatore.
- Online Seminar titled “Mathematical Modelling in Image Processing”, Dr. M.G.R. Educational and Research Institute, 23rd Apr 2024.
- International Guest Lecture on “What is Gaussianity in Non commutative Probability? And, Why do we care?” SRMIST, 29th Nov 2024.
- Online Seminar titled “Role of Algebra in Real Life”, Dr. M.G.R. Educational and Research Institute, 29th Jan 2025.
- Online Seminar titled “The Role of Graph Theory in Various Fields”, Dr. M.G.R. Educational and Research Institute, 18th Jun 2025.

### Participation in Workshop

- Workshop on Differential Equations and its applications, PSGR Krishnammal College for women, Coimbatore, 21.12.11 - 23.12.11.
- Workshop on “LATEX” Training held during, 5th & 6th March 2013 at PSGR Krishnammal College for women, Coimbatore.
- National Level Workshop on Emerging Trends in Mathematics, KG College of Arts and Science, 08/10/2016.
- Science Academies Lecture Workshop on Mathematical Modelling, PSGR Krishnammal College for women, Coimbatore, 21/12/2016 – 23/12/2016.
- Workshop on “Graph Theory using Python”, Vellore Institute of Technology, 3rd Sep 2022.
- International Workshop on “Academic Writing – Ethical issues”, Global Institute of Statistical Solutions, 3<sup>rd</sup> to 5th Sep 2022.
- National Workshop on “Fuzzy Theory and Combinatorics”, Vellore Institute of Technology, 14th and 15th Dec 2022.
- International Workshop on “Applied Mathematics”, SRMIST, 6th to 8th Feb 2023.
- 3rd National Workshop on “Recent Trends in Mathematics”, St.Peter’s Institute of Higher Education & Research, 13th Apr 2023.
- Workshop on “R Programming for Research”, Vellore institute of Technology, 29th to 30th May 2023.
- International Workshop on “Role of Mathematics in Machine Learning”, SRMIST, 4th and 5th Sep 2023.
- International Virtual Workshop on “Ramification of AI In Entrepreneurship Development”, B.L.D.E.A’s Commerce, BHS Arts and TGP Science College, 9th May 2024.
- International Virtual workshop on “The Equation of Intelligence: Exploring the Fusion of Mathematics and AI”, SRMIST, 23rd and 24th Aug 2024.
- Workshop titled “LaTex for Academic Writing”, Dr. M.G.R. Educational and Research Institute, 3rd & 4th Jun 2025.

## Participation in Faculty Development Programme

- Faculty Development Programme with Outcome Based Education, Karel Kubel Institute for Development Education, 9-10-2017 to 11-10-2017.
- Faculty Development Programme on Cloud Computing, PSGR Krishnammal College for women, Coimbatore, 1-3-2018.
- Faculty Development Program for Global Business Foundation Skills, Infosys BPM Ltd, Chennai, 1.8.2018 to 9.8.2018.
- FDP on Algebra and Analysis, PSGR Krishnammal College for women, Coimbatore, 28.9.2018 & 29.9.2018.
- FDP on New Framework of NAAC Accreditation, IQAC, PSGR Krishnammal College for Women, 05.07.2019-06.07.2019.
- FDP on Big Data Analysis in Bioinformatics, PSGR Krishnammal College for Women, 8.2.2020.
- Faculty Development Programme on Universal Human Values, IQAC, PSGR Krishnammal College for Women, 25.04.2020.
- International FDP on & How to write Effective case Study, Atmiya University, Rajkot-India, 02-05-2020.
- International Faculty development Programme on “Astute – Efflux Trends in Mathematics”, SNS College of Engineering, 02.07.2020 - 07.07.2020.
- Online Faculty development program on " Application of Mathematics ", Karunya Institute of Technology and Sciences, 20.07.2020 to 24.07.2020.
- Five Days Online Faculty Development Program on Applied and Computational Mathematics, Karunya Institute of Technology and Sciences, 20.07.2020 to 24.07.2020.
- International Faculty Development Program on "Recent Advances in Mathematics & Statistics" (IFDPRAMS-2020), GITAM, 3rd -8th August, 2020.
- International FDP on Mathematical Modeling in Multidisciplinary Domain, KPRIET, 1.6.2020 to 7.6.2020.
- International Faculty Development Programme on “Demystifying Optimization Techniques”, Bannari Amman Institute of Technology, 22 to 27 March 2021.
- International FDP “Frontiers of Mathematics”, SRMIST, 19th May to 2nd Jun 2022.
- National FDP on “Research Methodology: Analysis, Tools & Techniques”, Theivanai Ammal College for Women, 28th Dec 2022 to 3rd Jan 2023.
- FDP on “Open Source Software Tools for Research”, Vellore Institute Technology, 13th to 17th Mar 2023.
- FDP on “Essential of Data Science”, Vellore Institute of Technology, 15th to 19th May 2023.
- Faculty Enhancement Programme, PSGR Krishnammal College for Women, 5th to 10th Jun 2023.
- International FDP “Frontiers of Mathematics”, SRMIST, 5th Jul to 19th Jul 2023.
- “A Five – Day Online FDP on Advances in Graph Theory”, Vellore Institute of Technology, 11th to 15th Sep 2023.
- FDP entitled “Recent Trends in Mathematics and Technology”, OP Jindal University, 9th to 13th Oct 2023.
- FDP on “Methods for Improving Higher Education Teaching Quality Using Outcome Based Education, Pedagogical Approaches and NEP 2020”, 22nd to 26th Jul 2024.
- FDP on “Foundational Sciences: The Cornerstones of Engineering”, Sphoorthy Engineering College, 8th to 10th Aug 2024.
- FDP on “Exploring New Horizons in Mathematical Research”, V.O.Chidambaram College, 19th to 24th Aug 2024.
- FDP on “Programme on Latex”, Meerut Institute of Engineering and Technology, 9th, 23rd, 30th Nov & 7th, 14th Dec 2024.
- National FDP on “Recent Development in Pure & Applied Mathematics”, IIST, 23rd to 28th Dec 2024.
- International FDP on “Futuristic Pathways in Technology and Computational Methodologies”, Mary Matha College of Arts and Science, 6th & 11th Jan 2025.
- FDP on “Future Trends in Machine Learning and Data Science – Driven IOT Applications”, Haldia Institute of Technology, 10th to 13th Mar & 17th Mar 2025.
- FDP on “Emerging Trends in Graph Theory”, SCMS School of Engineering and Technology, 21st to 25th Apr 2025.
- FDP on “AI in Healthcare Management”, PET Engineering College, 16th to 22th Jul 2025.

## Participation in Webinar

- A six day national Webinar series on Applications of Mathematics, 06.07.2020-11.07.2020.
- Webinar on Mathematical Applications of Cryptography, GITAM, 09/08/2020 - 09/08/2020.
- International Webinar on Advances in Optimization Techniques held at Kalinga Institute of Industrial Technology (KIIT), Deemed to be University, 30/10/2020 - 01/11/2020.
- One day Webinar on Applications of Nature Inspired Optimization Techniques for solving Real Life Problems , 08/10/2020 - 08/10/2020.
- National Webinar on “ Operations Research and its applications”, Palamuru University, 29/07/2020 - 29/07/2020.
- International Webinar on “Plagiarism – Importance, Consequence and How to avoid”, Theivanai Ammal College for Women, 8th Mar 2023.
- National level Webinar on “World of PI”, S. S. C. College of Arts & Commerce, 14th Mar 2023.
- Webinar on “Applications of Combinatorial Objects to Graph Labeling Problems”, Government Arts and Science College, 12th Apr 2023.
- Webinar on “Variations of Domination in Graph Theory”, Mohamed Sathak A. J. College of Engineering, 16th May 2023.
- Series of lectures,” Infinite Insights: Unveiling Mathematical Marvels”, SRMIST, 18th to 21st Dec 2023.
- Webinar on “I – STEM – Empowering Academia/ Linking Researchers & Resources”, PSGR Krishnammal College for Women, 13th Feb 2024.
- “Three Day Free Online Excel Webinar”, Institute to Improvement, 8th to 10th Mar 2024.
- Webinar on “Problem Solving in Linear Algebra”, Dr. M.G.R. Educational and Research Institute, 3rd May 2024.
- Series of Lectures “Infinite Insights: Unveiling Mathematical Marvels”, SRMIST, 18th to 21st Dec 2024.

## Membership in Professional Bodies

Name of the Professional Body	Nature of membership	Duration
Board of Studies	Member	2011 till date
Indian Science Congress Association	Member	2017-2021

## Contribution

- Committee Member, NAAC Criteria II (2019 till date)
- College Calendar Member in 2024, 2025
- PMSSS Co- Ordinator 2024, 2025
- PM Vidyaxmi Scholarship Co- Ordinator 2025
- Ganita Association Co-Ordinator 2021-22
- Admission Incharge for 2015-2016, 2019- 2020

## Contact Details

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