

NEWS LETTER

The Department of Mathematics of RSET was a part of the Department of Basic Sciences & Humanities till 22nd June 2020. The Department of Mathematics was made an independent department on 22nd June 2020 in order to promote research activities and inter disciplinary projects. The department offers various Mathematics courses in the B.Tech and M.Tech programmes, apart from offering the PhD programme in Mathematics. The Department of Mathematics is recognized as a place of research in Mathematics under APJ Abdul Kalam Technological University, Kerala and has two research supervisors. The Center for Topology and Applications (CETA) established under the department is supported by National Board of Higher Mathematics, Department of Atomic Energy, and Department of Science & Technology, Government of India.

The objective of the courses offered by the department is to create engineers with strong mathematical background, creative thinking and problem solving skills, through systematic training and research and by discovering feasible solutions to challenging real world problems.

FACULTY AS RESOURCE PERSON

- Dr. Ramkumar P.B. delivered a talk on “Application of Mathematics in Engineering”, in Amazing Math webinar series second talk organized by UKF College of Engineering, Kollam on 15th August 2020.
- Dr. Ramkumar P.B. delivered a talk on “Partial ordering Lattices and its Applications”, in FDP on Graph theory and Discrete Mathematics, 3rd Talk organized by Universal College of Engineering, Irinjalakuda on 19th August 2020.
- Dr. Ramkumar P.B. delivered a talk on “Mathematical Morphological Operators on Graphs & Hypergraphs”, at an International Webinar series hosted by Maharaja’s College, Ernakulam on 26th December 2020.
- Dr. Vinodkumar P.B. delivered a talk on “Classification of Surfaces”, at International Webinar, organized by Maharaja’s College, Ernakulam on 8th December 2020.
- Dr. Vinodkumar P.B. delivered a talk on “From Analysis to Topology”, at Ramunujan Commemorative Webinar, organized by C M S College of Science and Commerce, Coimbatore on 16th December 2020.
- Dr. Vinodkumar P.B. delivered a talk on “Geometry Beyond Euclid”, at Loyola Institute of Peace & International Relations, Kochi on 20th January 2021.
- Mr. Shyam Sunder gave a class on “LaTeX” at a 3-day faculty development programme on research tools - online hands on training, organized by NSS College of Engineering, Palakkad, from 25th to 27th March 2021.

PROGRAMS ORGANIZED

- ❖ The department organized a Student Teacher Enrichment Programme (STEP) on 4 different topics in the months of September and October 2020.
 - ◆ STEP 1 on “Topology and Graph Theory” was conducted from 23rd to 25th September 2020 and 29th September to 1st October 2020. There were 8 resource persons and about 180 participants.
 - ◆ STEP 2 on “Linear Algebra” was conducted from 7th to 9th October 2020. There were 2 resource persons and about 120 participants.
 - ◆ STEP 3 on “Markov Chain” was conducted on 10th and 15th October 2020. There were 3 resource persons and 110 participants.
 - ◆ STEP 4 on “Mathematical Modelling” was conducted on 16th October 2020. There was one resource person and about 120 participants.
- ❖ The department conducted an international conference ICNTDM-2020 in collaboration with Ramanujan Mathematical Society from 11th to 14th December 2020. There were 43 sessions with 45 resource persons, 220 participants and 38 papers were presented.
- ❖ The department conducted the 17th All Kerala Mathematics Quiz Competition, Paper Presentation, MathQuest as part of Mathematics Club Day celebrations, during the dates 11th, 12th and 16th February 2021. There were about 70 participants.

DEPARTMENT SEMINARS

To enhance the teaching-learning process the department conducts a monthly seminar by faculty members of the department and research scholars on Saturdays. The objective is to share knowledge and new ideas in the field of mathematics. Due to the ongoing pandemic, all seminars are conducted online.

- On 19th September 2020, Reya Kuruvila gave a seminar on the topic “Probability and its Applications”.
- On 17th April 2021, Mr. Shyam Sunder Iyer gave a seminar on the topic “Effect of viscoelasticity and internal current on wave attenuation”.

FACULTY PUBLICATIONS

- Mr. Binu R. presented a paper titled “Neutrosophic Exact Sequence of an R-module”, in the conference on Recent Trends in Applied Mathematical Science, organized by Arunai International Foundation and Department of Mathematics, Kerala University, 26-27 September 2020.
- Ms. Radhika Das & Ms. Bindu V. A. published a paper titled “Lattice Points on the Homogeneous Cubic Equation with Four Unknowns $x^2-xy+y^2+4w^2=8z^3$ ” in International Journal of Research-Granthaalayah, ISSN No. 2350-0530(O) , ISSN No. 2394-3629
- Dr.Ramkumar P.B. published a paper titled “Fuzzy Logic Based Optimization Method for Mechanical Systems and its Application” in International Journal of Mathematics and Computer Science, 15(2020), no. 4, 1179–1185.

- Dr. Ramkumar P.B. published a paper titled “A graph polynomial for independent sets of Fibonacci trees” in International Journal of Mathematics and Computer Science, 15(2020), no. 4, 1129–1133.
- Dr. Jaya Abraham presented a paper titled “Some Properties of Weighted Hexagonal Picture Automata and Weighted Logics”, in the conference ICNTDM 2020, 11th to 14th December, 2020.
- Dr. Binu R. published a paper titled “Some Characterization of Neutrosophic submodule of an R-module” in Applied Mathematics & Non linear sciences.
- Ms. Bindu V.A. published a paper titled “Solution Of Pell Equation By Sophie Germain Primes” in Juni Khyat, Volume 11 Issue II Page.
- Mr. Binu R. published a paper titled “Neutrosophic soft Set and Clinical Application”, in Journal of Information Science and Engineering, 37, 381-393
- Sreeja K U, along with Dr Ramkumar P.B. and Vinodkumar P.B. published a paper titled “Characterization of quadratic independence polynomial of path graph, cycle graph and wheel graph”, in Malaya Journal of Matematik, Vol 9, No. 1, 1029-1034, 2021

FACULTY ACHIEVEMENTS

- ◇ Dr. Rinku Jacob along with Dr. Ramkumar P.B. as CoPI received official approval for the project titled “Study and Characterization of Cardiac dynamics from ECG signals based on complex network measures and to automate the classification of arrhythmias using convolutional neural network” from the Department of Science and Technology (DST) - SERB. The duration of the project is three years.
- ◇ Dr. Vinodkumar P.B. received official approval for the project titled “Data Analysis Using Fractal Simplicies On Reeb Graphs of Topological spaces” from International Mathematical Union. The duration of the project is three years.
- ◇ Dr. Dhanya P.M, Dr. Ramkumar P.B., Dr. Sreekumar, Dr. Jathavedan M. got an international patent on “Constructing Morphology of Multilevel Intuitionistic Fuzzy Hypergraphs” on 10th February 2021.
- ◇ Dr. Binu R. was awarded the Doctorate Degree in Mathematics in the faculty of science on 20th April, 2021 from Mahatma Gandhi University. He completed his research entitled “A study of Neutrosophic Submodules and Applications” under the guidance of Dr. Paul Isaac, Bharata Mata College.
- ◇ Vishnu Sankar, Gireeshkumaran Thampi B. S., Radhakrishna Panicker M. R., and Ramkumar P. B. got an innovation patent from IP Australia on “Fuzzy Logic Based System and Method for Optimization of Thermal Barrier Coating thickness in Internal Combustion Engines” on 2nd June 2021 for 8 years.

BOARD OF STUDIES

As per the notification (Ref: No.BOS/N-1/20200) published on 1st December 2020, meeting of Board of Studies (BoS) in Mathematics was conducted on 7th December 2020. It was constituted by incorporating two Subject Experts, one Industrial Expert and one alumnus along with the faculty members. The Head of the Department, Dr. Ramkumar P.B. is Chairperson of the BoS and external members present were

- Dr. Sunil Jacob John (External Subject Expert , NIT Calicut)
- Dr. Shery Fernandez (External Subject Expert, CUSAT)

- Mr. Nishanth P.R (Expert form Industry, Managing Director, Technovia Info Solutions)
- Ms. Nithya M.B (Alumni, Associate Product Engineer, San Disk, Bangalore)

PROGRAMS ATTENDED BY FACULTY

S. No	Faculty Name	Webinar	Conference	Course	Workshop	Training /FDP
1	Mr. Abraham Jacob		1			
2	Ms. Bindu V. A.	2		1		2
3	Mr. Binu R.	3	1			4
4	Ms. Eva Cherian	3	1	3	1	3
5	Dr. Jaya Abraham	5	2	2	1	5
6	Ms. Maria Poulse	16	4	3	2	2
7	Ms. Radhika Das	5	1		1	4
8	Dr. Ramkumar P. B.	8	1			2
9	Ms. Reya Kuruvila	1			1	1
10	Mr. Shyam Sunder Iyer	6	1	2		2
11	Ms. Vinmol K. Jesudas	1	1	2	1	3
12	Dr. P. B. Vinod Kumar		1			

Editor: Mr. Shyam Sunder Iyer