

DEPARTMENT OF MATHEMATICS

ANNUAL REPORT 2023-24

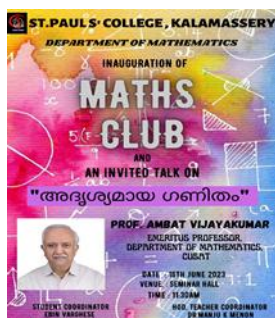
We, The Department of Mathematics hereby present the annual report of our activities for the academic year 2023-24.

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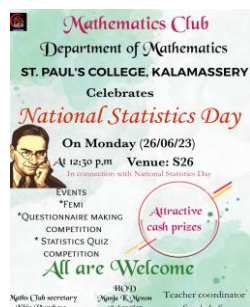
Maths Club Inauguration

The inaugural function was started by seeking the grace of the almighty with the prayer song led by Bro. Jose Renish of 3rd year B. Sc Mathematics. Bro. Ebin Varghese M. B, the secretary of maths club welcomed and the presidential address was given by Dr. Savitha K. S, Principal in charge of St. Paul's college. The importance of maths club was well reminded by her and she blessed this to be a fruitful year. Prof. Ambat Vijayakumar, the Emeritus Professor of the department of mathematics, CUSAT, inaugurated the maths club by lighting the lamp. He wished us good luck and also gave us new ideas that can be done as an activity of maths club. An interactive session was there which was very much appealing to all that opened vast opportunities in the field of Mathematics. As a token of gratitude Dr. Manju K. Menon, HOD of Mathematics department handed over memento to the chief guest. Sr. Abi Nivetha delivered the vote of thanks.



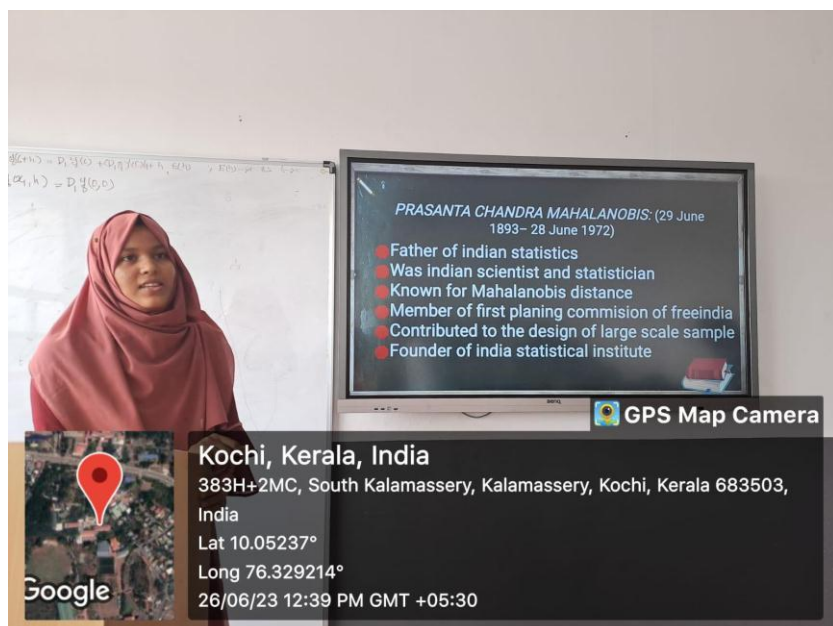
Statistics Day Celebration

Commemorating the birth anniversary of Prasanta Chandra Mahalanobis (July 29), Father of Indian Statistics, maths club organized several programmes on 26 July 2013. The first FEMI of this academic year was conducted by Suraiyya K of 3rd B.Sc Mathematics on 'The life and contributions of P.C Mahalanobis'. To spread more the importance of the day, two interdepartmental competitions were conducted which had good participation from within and outside the department. The first competition was a quiz competition on statistics and the second competition was questionnaire making on the topic 'online payment and UPI transactions among youngsters'. Ramakanth of 2nd B.Sc Mathematics secured the first prize in the quiz competition and Murshitha E.H of 1st M.Sc Mathematics and Anagha Menon of 1st M.A Economics were declared the winners of the questionnaire making competition



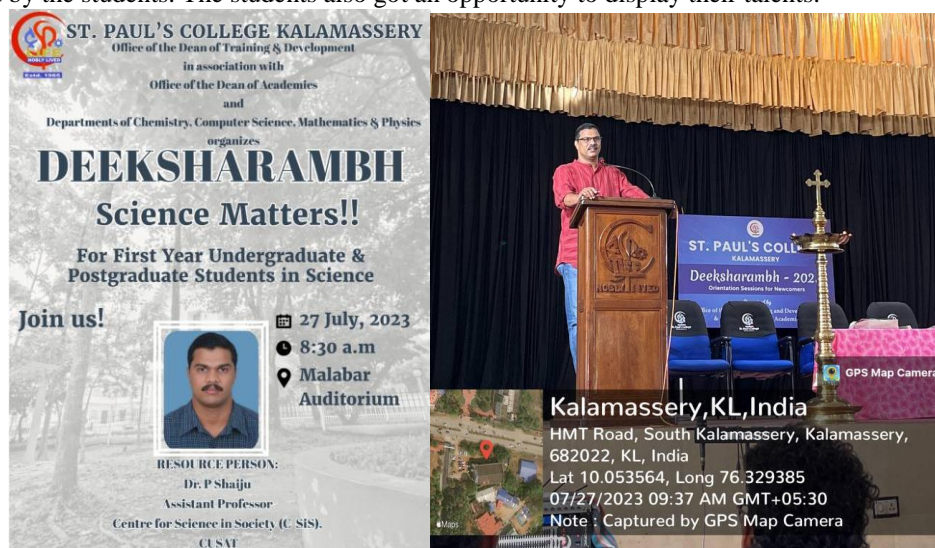
FEMI- P.C Mahalanobis And Mahalanobis Distance

The Femi on P.C Mahalanobis and Mahalanobis distance was held on 26-6-2023 in class S26 as part of celebration for national statistics day. Birthday of professor P.C Mahalanobis is celebrated as national statistics day in India. The objective of the Femi was to give an introduction about P.C Mahalanobis and to give an idea on Mahalanobis distance. The Femi commenced with an introduction to Mahalanobis distance, which is a measure of distance between point and a distribution introduced by Indian statistician P.C Mahalanobis



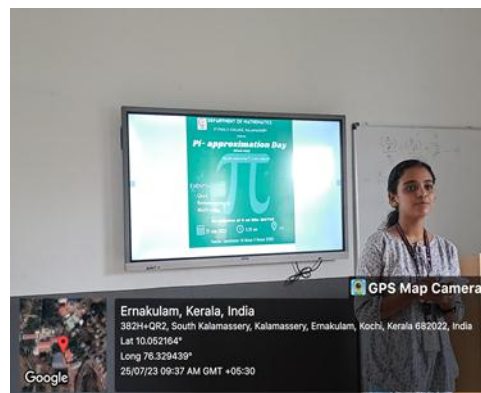
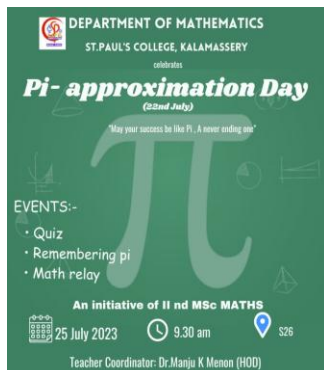
DEEKSHARAMBH 2023

The programme was primarily organized as an orientation for the first year undergraduate and post graduate students of science. It was jointly conducted by the Departments of Chemistry, Computer Science, Mathematics and Physics. The programme was inaugurated by the Assistant Manager, Fr Raphael Kalluveetil. The resource person, Dr Shaiju P, has made a name for himself in the field of popularizing science. His talk was well received by the students. The students also got an opportunity to display their talents.



PI Approximation Day

Maths Club organized Pi Approximation Day on 25th Jul 20, 2023 in connection with the Pi Approximation Day Celebrations. II MSc Mathematics students organized a variety of programmes and our I BSc and I MSc Mathematics students participated enthusiastically. The programmes were remembering Pi, Pi-Maths Relay and a quiz on Pi. Prizes were distributed by teachers and Dr. Manju K. Menon thanked MSc students for organizing such a beautiful programme.



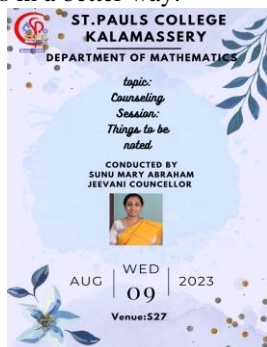
Buddy Teaching

Current IInd MSc students requested the Head of the department to arrange a quick revision class and a doubt clearing session on the paper titled 'Python and Numerical Analysis' which was handled by a guest faculty in the last year. Department sought the help of last year's rank holder, Ms. Fasna K S and she was very much willing to help them through buddy teaching. Through her beautiful way of teaching and discussion method, Fasna gave a quick revision and discussed important questions and some programming. The session on 3rd August was very useful to all those attended.



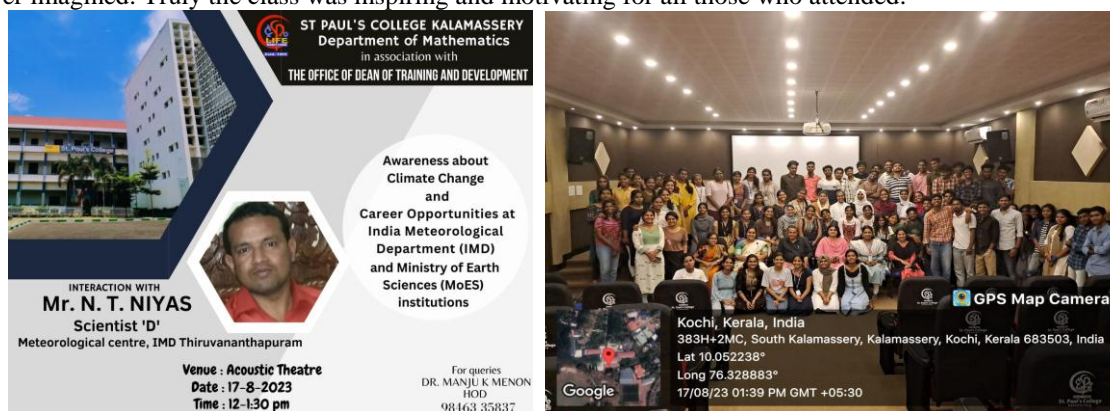
Counseling Session: Things to be noted

Counseling is needed among many students and the Jeevani counselor interacted with our MSc first semester students on 9th August 2023 during the third hour. She interacted with the small group to understand their problems in a better way.



Career Opportunities at IMD and MoEs

What after BSc / MSc Mathematics is a question in all our students' minds. This class was handled by Mr. Niyas N T, Scientist at the meteorological department, Trivandrum. It was happy to note that Physics must be learned by the aspiring students at a subsidiary level and this session was open to our students and Physics students on 17th August 2023. Mr. Niyas gave an idea about climate change and talked in detail about the career opportunities in India meteorological Department and Ministry of Earth Sciences. He discussed in detail about the challenges and opportunities in this department. As he himself is a postgraduate in Mathematics, he conveyed that mathematics students can do wonders in this department and his class motivated our students like anything. Many students commented that his class gave them an awareness about the career opportunities in this department which they never imagined. Truly the class was inspiring and motivating for all those who attended.



Freshers Day - Oru College Bandham 23

The freshers day for the undergraduate students was given on 18th August 23 by the second year and final year BSc Mathematics Students.



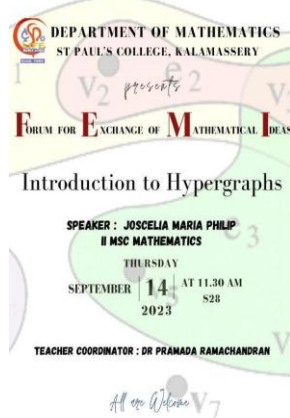
Participation in Exhibition on 29/09/23

In the exhibition conducted at St Paul's school, Kalamassery, the departments of Physics, Chemistry and Mathematics of our college actively participated. From the department of Mathematics, the Students from first MSc exhibited various mathematical models including Konigsburg bridge problem, Mobius strip, Tower of Hanoi, Square root spiral, various 3D shapes etc. Students had a great time and opportunity interacting with the student visitors explaining them about the models.



FEMI - Hyper graphs

FEMI is to introduce new and interesting mathematical areas, ideas and concepts that do not fall within the limits of the prescribed syllabus. Maintaining this philosophy, Ms Joscelia Maria Philip of II M Sc Mathematics introduced the concept of Hypergraphs. She explained that it is a natural extension of the graphs, per se, and offered much scope for exploration.



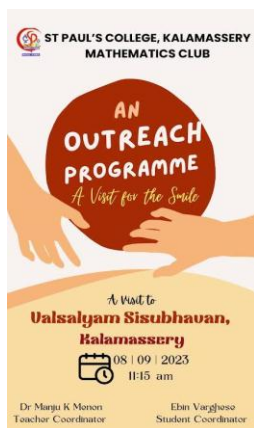
Freshers Day - PG

Freshers Day was celebrated in the afternoon session. Seniors gave a warm welcome. The welcoming note was done by Murshiha EH of II MSc. Each one had to do a self introduction funny tasks as an individual as well as a pair. The seniors slay their performance as usual; even juniors did their part well. The thanking note was done by Dr Manju K Menon. The snacks were provided at the end. It was a colorful day.



A VISIT FOR THE SMILE - Outreach Activity

As a part of outreach activity, students who were willing to do service were taken to the nearby orphanage. It was truly a visit for the smile which gave great satisfaction to the students and enhanced their social commitment. The visit was truly a heart touching one. The students were able to understand the hidden situations of the society. They could understand there are children who are normal like us but underprivileged. It could create a sense of approach to those marginalized portions of the society. It paved a way to show our social commitment and we were able to enhance that commitment.



Teacher's Day Celebration

Teacher's Day was celebrated joyously on 5th September 2023. Teachers from our department as well as teachers from other departments especially English, Malayalam, Hindi, Physics ensured their presence. The chief guest of the day was Maya Miss, she made a special entry and surprised all other teachers. Teachers did various performances on request and snacks were provided. Dr. Manju K Menon thanked the students for conducting such a beautiful event. Everyone enjoyed the day. It was a good day to remember.



Gandhi Jayanthi Celebrations - Make It Clean Make It Fun

As a part of Gandhi Jayanthi Celebrations, students and teachers of the department jointly cleaned the class rooms and department as a token of their respect to the Father of Nation who had made cleanliness and sanitation as a part of his life. Swatch Barath mission is also visioned in view of this.



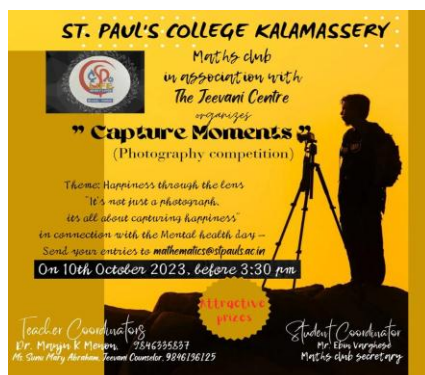
Nature Walk- Green Vibes

Under the guidance of Miss Sreekala S, the nature club coordinator of our department, we organized a nature walk on 04-10-2023 along with a campus tour inside the college and the nearby Angel Mary Nagar which gave immense satisfaction in exploring nature in a new environment.



Capture Moments - Photography Competition

As a part of World Mental Health day, Maths Club in association with the Jeevani Center of our college conducted a photography competition on the theme '**happy moments**'. It was a college level competition and the participants were asked to send their entries to department mail before 10th October 23 before 3.30 pm. Ms. Jessie Daniel and Ms. Sunu, Jeevani counselor judged the entries and the prize winners were informed through the coordinator Dr. Manju K. Menon.



Kerala Piravi Celebration - Oru Kochu Kerala Piravi Aghosham

Kerala formation day- Oru Kochu Keralapiravi Aghosham 2K23 was celebrated in the department on 1st November 2023 with a small gathering at the class room S27 with lots of entertainment and laughter. Teachers Ms. Sreekala S and Ms. Divya Ance Varghese started the show with the music fiesta. Mr. Mohammed Nizam P A also sang a beautiful malayalam song. II MSc mathematics students organized some fun activities. They performed a dance. Kerala snack Uzhunnuvada and chammanthy was served to all.




National Workshop On Spectrum And Energy Of Graphs

A National Workshop on Spectrum and Energy of Graphs, sponsored by the Kerala State Council for Science, Technology and Environment, (KSCSTE), was inaugurated at St Paul's College, Kalamassery on 15-11-2023 by the College Director, Rev Fr Felix Chullikkal. The function was presided over by the Principal, Dr Savitha K S. Dr Manju K Menon, Head of the Department of Mathematics and Ms Nisha V M, Convenor, spoke on the occasion. The keynote address was delivered by Dr Ambat Vijayakumar, Emeritus Professor, Cochin University of Science and Technology.

The list of speakers include Prof Dr Sharafudeen Pirzada, Kashmir University, Prof Dr H. S Ramane, Karnataka University, Prof Dr G Indulal, Principal, St Aloysius College, Edathua, Prof Dr Rakshith B R, Manipal Institute of Technology and Dr Anu Varghese, Assistant Professor, BCM College, Kottayam.

Researchers from different parts of the country are set to participate in the workshop, which will conclude on 16/11/2023..Around 37 teacher participants and student participants from various parts of India attended the workshop.

Speakers	Speakers	About the workshop
 Dr. Ambat Vijayakumar Emeritus Professor CUSAT Topic: Introduction to graph spectra	 Dr. H. S. Ramane Professor Karnataka University Dharmad Topic: Energy of graphs and Equi-energetic graphs	<p>The main objective of this workshop is to serve as a platform for the exchange of knowledge and ideas among researchers, students and professionals interested in graph theory. The workshop aims to disseminate the latest advancements in graph spectra and energy, providing participants with valuable insights into the fundamental concepts and their practical applications. The workshop envisions to encourage innovative research contributions and promote the dissemination of findings, thus contributing to the ongoing development of this dynamic field. By bringing together experts and enthusiasts from various backgrounds, the workshop strives to create a vibrant and inclusive community of researchers dedicated to advancing the understanding of graphs and their spectra, ultimately drive progress in both theoretical graph theory and practical problem solving.</p> <p>For more details : Nisha V M Convenor NWSEG-2023 Assistant Professor Department of Mathematics St Paul's College, Kalamassery Kerala-683503 7356037099 mathematics@stpauls.ac.in</p> <p>Account Details: Name : Nisha V M A/C No : 67112994769 Bank : SBI Branch : Kalamassery main IFSC : SBIN0070145</p>
 Dr. Anu Varghese Assistant Professor BCM College Kottayam Topic: Distance spectra and Energy of graphs	 Dr. Rakshith B. R. Assistant Professor Manipal Institute of Technology Manipal Topic: Graphs determined by their spectra and Energy of graphs with self loops	
 Dr. Indulal G. Professor & Principal St Aloysius College Edathua Topic: Relationship between spectrum and graph structures	 Dr. Sharafudeen Pirzada Professor University of Kashmir Srinagar Topic: Laplacian spectra and energy	

Organising Committee	Registration Fee	Registration
Manager Rev Fr Varghese Indrapramodhan Director Rev Fr Felix Chullikkal Assistant Manager Rev Fr Rajagopal Kalluvilal Principal in-charge Dr. Savitha K S Head Mathematics Dr. Manju K Menon Vice Principal Dr. Prasad Ramachandran Convenor Ms Nisha V M Ms Snehal S Ms Aksha Mishra Ms Dipa Anand Singh Ms Jincy Daniel	For Students: 1000 For Faculty / Research Scholars: 2000 The registration fee does not include accommodation charges. The participants who need accommodation will be assisted in finding accommodation as per request and availability. Last Date of Registration: 05/11/2023 For registration: Click Here Please note that the total number of participants is restricted to 70.	 ST PAUL'S COLLEGE KALAMASSERY <small>ESTD 1958</small> HIGHER SECONDARY P.O., KALAMASSERY, ERNAKULAM DISTRICT APPLICABLE TO MARATHA UNIVERSTY, KOTTAYAM NATIONAL WORKSHOP ON SPECTRUM AND ENERGY OF GRAPHS (NWSEG-2023) 15 - 16 November, 2023 Department of Mathematics St Paul's College Kalamassery & Co-sponsored by KSCSTE



Christmas Celebrations

As part of the Christmas celebrations interdepartmental competitions were held from 11 am to 1 pm. The competitions included Christmas card making, wreath making and star making. At 2 pm everyone gathered at Daniel hall and began department level celebrations which were conducted by the third year undergraduate students. Everyone exchanged Christmas friend gifts which started with HOD and various programmes were conducted by the students. Cake was cut by the Principal . Also the prizes for the competitions conducted in the forenoon session were distributed.



FEMI- Ramanujan's Realm-A Mathematical Legacy

A FEMI on Srinivasa Ramanujan was held on 18.12.2023 in class S26 as part of the celebration of National Mathematics Day. The speaker led the audience through a detailed study on the life and work of the brilliant mathematician, who battled several odds to leave a lasting legacy as one of the finest Mathematicians the world has seen. He also touched upon Srinivasa Ramanujan in the public domain – be it in stamps or through movies.



National Mathematics Day Celebrations Related Competitions

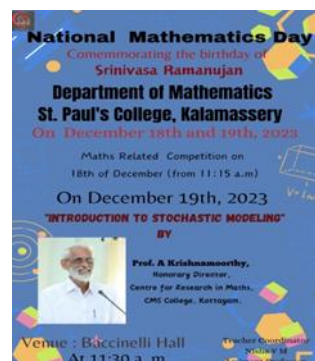
As part of the National Mathematics Day celebrations, various math related competitions were conducted on 18-12-2023. The competitions include Pi – Remembrance, Sudoku, Maths Quiz, Chess, Rubix cube, Memory test, Puzzle Solving, Tambola and Treasure hunt. Students from various departments participated and won prizes. The winners of the various competitions were given cash prizes.



National Mathematics Day Celebrations Related Invited Talk

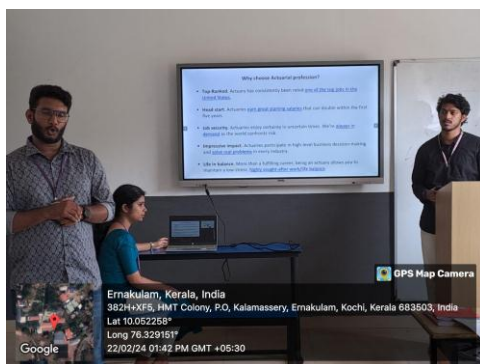
National Mathematics Day is celebrated in a grand manner as in previous years. As part of that a talk by Prof. A Krishnamoorthy, Honorary Director, Centre for Research in Maths, CMS college, Kottayam was organized and

the talk gave an insight to a new topic to the students, 'stochastic modeling'. Students from UG class attended the talk. He also distributed prizes for various competitions conducted in connection with national Mathematics Day.



OPPORTUNITIES IN THE ACTURY SECTOR:A PEER INTERACTION

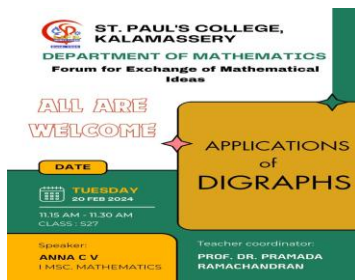
A peer interaction with students of MA college, Kothamangalam on the topic “**Opportunities in the Actury Sector**” was conducted on 22/02/2024. The students gained a basic level of understanding about the course. Opportunities in the actury sector were discussed in detail.



APPLICATIONS OF DIGRAPHS

F(orum) for E(xchange) of M(athematical) I(deas)

In keeping with the objectives of FEMI, Ms Anna C V of I M Sc Mathematics introduced the concept of digraphs and their applications on 20/02/2024. She explained several fundamental concepts and some applications too.



A talk on Human Rights and Gender Sensitization

Maths Club in association with the Women Empowerment Cell of our college organized this session on 15/02/2024 to create an awareness about human rights and gender sensitisation among the students. The programme was sponsored by Kerala State Women's Development Corporation and Adv. Sabu K Varghese, Advocate, High Court of Kerala was the resource person. The session was well appreciated by the audience, especially the interaction at the end.



M Sc Enrichment Programme

An enrichment programme for MSc students was conducted on 23/02/2024. Dr. Didimos K V, Assistant Professor, S H College, Thevara handled the session on "Geometric intricacies in Real Analysis" as part of this programme.



Career Opportunity in Navy after Post Graduation

The Department organised a talk on career opportunities in the Navy for women after Post Graduation . The resource person Ms. Nisha V M, Assistant Professor, Department of Mathematics spoke on the post of education officer in navy, the different levels of its selection procedure , exam pattern , and various benefits for the post.



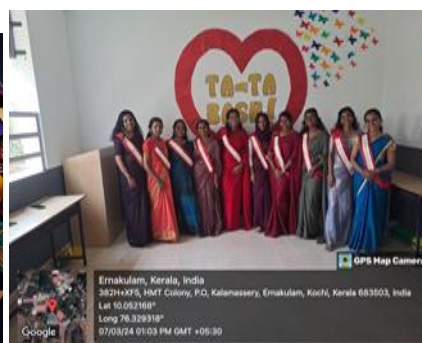
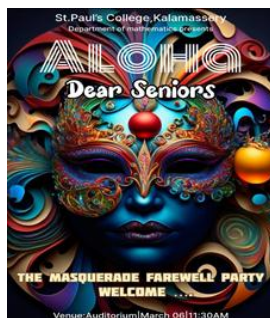
PI DAY

Maths club celebrated “PI”day on 14.03.2024. The programme was led by our First year UG students which consisted of a quiz, remembering PI and also a session on “PI and the significance of PI day”.



Farewell to seniors

A grand farewell to all the senior batches was given by their juniors as a Maths club initiative.



VALEDICTORY FUNCTION OF MATHS CLUB ACTIVITIES

The activities of the maths club for the academic year 2023-24 concluded with a valedictory function on 22.03.2024. The annual report was presented by the Maths club secretary Br. Ebin of 3rd B.Sc Maths. Our students Ramakanth, Sahina and Krishnaveni of 2nd B.Sc Maths shared their experience of the MTTS(Mathematics Training and Talent Search) programme they had attended during March. The event also featured various cultural programmes and concluded with a vote of thanks.

