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**BHARATA MATA  
COLLEGE  
THRIKKAKARA**

Affiliated to MG University, Re-accredited by NAAC with 'A+' Grade, ISO 9001-2015 Certified

# **ANNUAL REPORT 2022-2023**

**DEPARTMENT OF MATHEMATICS**



## *Department at a Glance*

The Centre for Post Graduate Studies and Research, Department of Mathematics started functioning in 1965, together with the establishment of the college. From its initial days as a department supporting a Pre-degree course, it has come a long way to become a recognized research department in 2006. Degree course in Mathematics was started in 1978, M.Sc. Mathematics in 1995 and Research centre in 2006. The former faculty members of the department are Prof. P.D. Ouseph, Dr. K.T. Jose, Dr. B.V. Baby, Dr. M.K. Augustine, Dr. Sr. Sophiamma Isaac, Dr. Sr. Tessy Kurian, Prof. James George K., Prof K.O. Peter, Dr.Lissy Jacob, Dr. M.V. Rosa, Dr. Thomas Joseph, Dr. Sr. Princy K L, Prof. (Dr.) K V Thomas, Dr. Pearly P John and Prof. (Dr.) Paul Isaac. At present there are 2 permanent and 6 guest faculty members in the Department. All permanent faculty members hold Ph.D. Three of them have M Phil in mathematics.

To our great reputation, the research centre of the Department has produced ten Ph.D. till date and has published about 50 research publications in national/international journals during 2014-22. Ten students are currently doing their Ph.D. Dr. Seethu Varghese (HOD) has been recognised as MG university approved research guide in Mathematics in the academic year 2022 - 23. The research centre currently has 3 active research guides.

The department currently has 81 UG students, 23 PG students and 10 research scholars. The students of the department perform well in university exams, bagging university ranks almost every year. Our two students of PG 2022-22 batch, Hima Manoj K. and Namitha Padmajan, secured second and seventh university ranks, respectively. During 2014-22, the department could produce 8 ranks (3 UG & 5 PG), 3 S & 49 A+ holders. Students of the department have high placement records. More than twenty students were placed in various reputed companies during the last three years.

The department successfully organized an international workshop co-sponsored by Kerala State Council for Science, Technology and Environment (KSCSTE) in November 2022, with 10 international & national speakers and 47 participants from various national institutes. 3 invited talks, 1 industry interaction and 1 extension programme were also conducted in the academic year 2022-23.



## *Department vision*

To emerge as a centre of excellence in Mathematics by moulding competent students and inculcating a research culture.

## *Department mission:*

- To provide a state of the art academic environment in which the students can inculcate strong fundamentals in mathematics and thereby gain on their competency.
- To foster the idea and the need for innovative research which can be an aid in the sustainable development of the society.

## *Programmes Offered*

Programme	Name / specialisation
UG	B. Sc. Mathematics
PG	M.Sc. Mathematics
P. hD	Fuzzy theory, Graph Theory, Numerical Analysis
Certificate/ Add-on	Add on Course on 'Basics of Statistics using Microsoft Excel' and 'Mathematical Typesetting Using Latex'

## *Department Highlights*

**Research Guides - 3**

**Paper Publications - 2**

**Paper Presentations - 7**

**University Rank Holders - 2**

**MoUs - 2**

**Workshops/Seminars/**

**Invited Talks - 5**

## *Faculty Profile*

### ***Dr. Seethu Varghese***

Assistant Professor

Qualification: M.Sc, Mphil, Ph.D

Joining Year: 2019



### ***Dr. Lakshmi C***

Assistant Professor

Qualification: M.Sc, Ph.D

Joining Year: 2019



### ***Karthika V***

Guest Faculty

Qualification: M.Sc

Joining Year: 2021



### ***Dr. Vinitha Xavier K M.***

Guest Faculty

Qualification: M.Sc, M.Phil, Ph.D

Joining Year: 2019





## *Faculty Profile*

### *Disna Mary Joseph*

Guest Faculty

Qualification: M.Sc., NET

Joining Year: 2022



### *Nishamol Francis*

Guest Faculty

Qualification: M.Sc.

Joining Year: 202



### *Alaka Mohan*

Guest Faculty

Qualification: M.Sc.

Joining Year: 2020



### *Alsha Joseph*

Guest Faculty

Qualification: M.Sc., M.Phil

Joining Year: 2022



## ***Aswathy M A***

Guest Faculty

Qualification:M.Sc

Joining Year: 2022



## ***Agaja Narayanan***

Guest Faculty

Qualification:M.Sc., UGC JRF

Joining Year: 2022



## ***Student Profile Batch wise***

Class	Batch (eg.2021-24)	Male	Female
UG – 1st Year	2022 – 25	9	10
UG – 2nd Year	2021 – 24	13	24
UG – 3rd Year	2020 – 23	9	26
PG – 1st Year	2022 – 24	0	10
PG – 2nd Year	2021 – 23	0	13
<b>Part Time</b>			
Part Time		1	4
<b>Full Time</b>			
Full Time		0	5



## Student Representatives

Class	Male (Name)	Female (Name)
UG – 1st Year	Vishnu K M	Azmin Abdul Salam
UG – 2nd Year		Rizwana M A
UG – 3rd Year	Shadhil Salam	Nandana Rajeev
PG – 1st Year		Priya Elizabeth Abraham
PG – 2nd Year		Aardra Rajeev

## Result Analysis of Students 2018-21 (UG) & 2019-21 (PG)

UG						PG			
Semester									
I	II	III	IV	V	VI	I	II	III	IV
34	34	34	33	33	33	12	12	12	11

UG						PG				
Semester										
	32	31	30	27	28	26	9	9	10	9
<b>Count</b>	94.11	91.17	88.23	81.81	84.84	78.78	75	75	83.33	81.82

## Result Analysis of Students (Result Declared in 2021-22 AY)

Program	Batch	Semester	No of Students registered	No of Students Passed	Percentage
B.Sc Mathematics	2020-23	II	35	23	65.71%
B.Sc Mathematics	2020-23	III	35	27	77.14%
B.Sc Mathematics	2020-23	IV	35	22	68.75%
B.Sc Mathematics	2020-23	V	29	21	72.4%

B.Sc Mathematics	2021-24	I	35	34	97.14%
B.Sc Mathematics	2021-24	II	34	24	70.58%
M.Sc Mathematics	2021-23	I	13	7	53.8%
B.Sc Mathematics	2020-23	VI	31	15	51.6%

## *Department contribution to examinations*

Name of the Faculty	Role Taken
Dr. Seethu Varghese	Sixth Sem. U.G valuation started on 23-05-2022 Third sem PG valuation Third Sem. U.G valuation started on 29/06/22 to 05-07-2022 Fourth Sem P. G valuation First Sem. U.G. valuation started on 24-08-2022 First sem PG valuation Fourth sem UG valuation from 30-11-2022 to 01-12-2022 Second sem UG valuation started from 06-01-2023 Fifth sem UG valuation from 02-02-2023 to 06-02-2023 UG Fourth sem revaluation UG Sixth sem valuation from 09-05-2023 to 12-05-2023
Dr. Lakshmi C	Third Sem. U.G valuation from 30/06/22 to 05-07-2022 Fourth Sem P. G valuation on 21-11-22,22-11-22, 24-11-22,25-11-22 Second sem UG valuation on 06-01-2023,09-03-2023 Fifth sem UG valuation from 02-02-2023 to 07-02-2023 Fifth sem UG valuation on 13-02-2023 & 22-02-2023 Chief Examiner for UG 3rd Sem home evaluation on 28-03-2023 UG Sixth sem valuation from 09-05-2023 to 12-05-2023 Question Paper Setter Prepared MCQ in Abstract Algebra for Sem-I Private registration Post Graduate programme
Disna Mary Joseph	Additional Examiner for Second sem UG valuation started on 06-01-2023 Fifth sem UG valuation from 02-02-2023 to 06-02-2023
Karthika V	Additional Examiner for Sixth Sem. U.G valuation started on 23-05-2022

Alaka Mohan	Additional Examiner for Second sem UG valuation started on 06-01-2023 Fifth sem UG valuation from 02-02-2023 to 06-02-2023 Third sem valuation on 28-03-2023
Aswathy M A	Additional Examiner for Third sem valuation on 28-03-2023
Dr.Vinitha Xavier K	Third Sem. U.G valuation started on 29/06/22 to 05-07-2022 First Sem. U.G. valuation from 24-08-2022 to 26-08-2022 Fourth sem UG valuation from 30-11-2022 to 01-12-2022 Second sem UG valuation from 06-01-2023 to 09-01-2023 Fifth sem UG valuation from 02-02-2023 to 06-02-2023 Third sem valuation
Alsha Joseph	Additional Examiner for Third sem valuation on 28-03-2023

## *Institutional responsibilities held by the faculty*

Name of the Faculty	Responsibilities Held
Dr. Seethu Varghese	College Council Secretary from 18-09-2021 to 31-05-2023 Member of PG admission committee Member of grievance cell
Dr. Lakshmi C	Attendance coordinator Member of entry level exam team Member of UG admission committee

## *Department Association*

Mathematics Association is a collaboration of students and teachers of the department, which serves as a platform for fostering collaboration and networking among students and faculty members. It facilitates connections with alumni, professionals in the field, and researchers from other institutions, creates opportunities for internships, research collaborations, and mentorship.

Mathematics association conducts several curricular and extra curricular programmes every year. Unlike previous years, we constituted an association executive committee comprising of ten members, two faculty and eight students. HOD is the president and another faculty acts as the association in charge. Other committee members are Secretary, Assistant secretary, Treasurer, Magazine editor and elected class representatives from each UG & PG class. Association team takes the lead role in all the activities of the association. The programmes are planned in the beginning of the academic year by the executive committee, with the consent of the faculty in charge and, it will be executed in proper time.

Mathematics Association conducts the following programmes

- Arrange welcome to the freshers
- Congratulate and honour the A+ and A holders
- Teachers Day Celebration
- Arrange classes by eminent Mathematicians
- Onam celebration with programmes and Onam Sadhya
- Visit and give financial assistance to differentially abled group, poor homes and related institutions
- Manuscript magazine by students every year
- Celebrate mathematically important days like National Mathematics day by conducting programs such as mathematics fest, interdepartmental competitions, intercollegiate mathematics quiz etc.
- Celebrate Christmas with gift exchange to X'mas friend selected in the presence of teachers, cake cutting, making X'mas crib, carol singing etc.
- Arrange farewell programme to the outgoing students.
- Acknowledge and honour winners with remarkable achievements in arts and sports.

# *Azadi Ka Amrit Mahotsav - Independence Day Celebration - 2022*

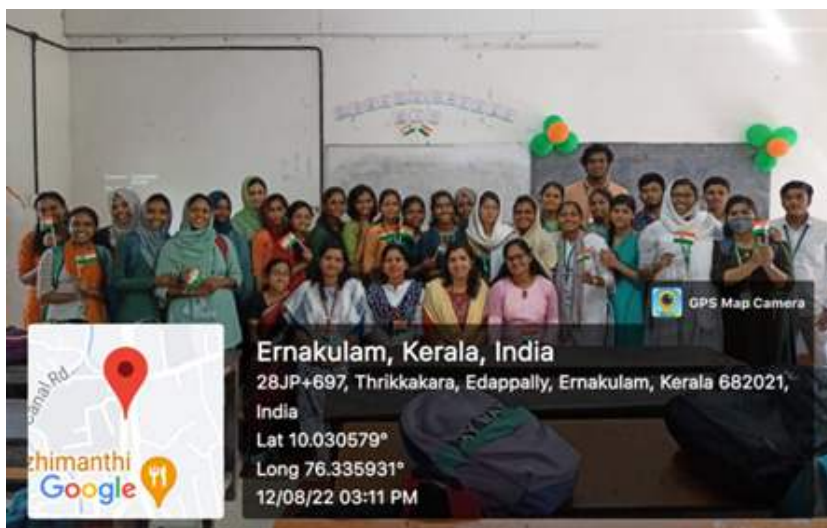
India's celebration of 75 years of independence from British rule has been nothing but grand. The government started a 75-week countdown from March 12, 2021, celebrating 'Azadi ka Amrit Mahotsav' to mark this day. To join this, Mathematics Association of Department of Mathematics, Bharata Mata College also organized several programmes.

Independence Day was celebrated with great enthusiasm by all the students. The students cleaned their classrooms and decorated them with colourful balloons and colour papers. The programme commenced at 2.30 pm. The venue was second year classroom. All the teachers and students were welcomed with a small National flag. Ann Mary M.M., class representative of the second year class was the master of ceremony. The prayer song was sung by Ms. Aleena Muhammed Ali, a second year student. Welcome speech was delivered by Annmary. Dr. Lakshmi C, Assistant Professor, Department of Mathematics, delivered an Independence Day message. She also appreciated the students for conducting the programme. After that a patriotic song was sung by Jyothika K. Jayan, Aleena Muhammed Ali, Abdul Ahad A.C. and Anujith Raj.

Then, Ann Mary gave a narration on freedom struggle of India and how India became Independent on 15 th August 1947. It was well explained by her. To visualize the entire freedom struggle of our nation, a video presentation was arranged.

All the students were a part of the programme. Finally the programme came to an end with the national anthem at 3 pm. It was a day of immense pride and joy for all.

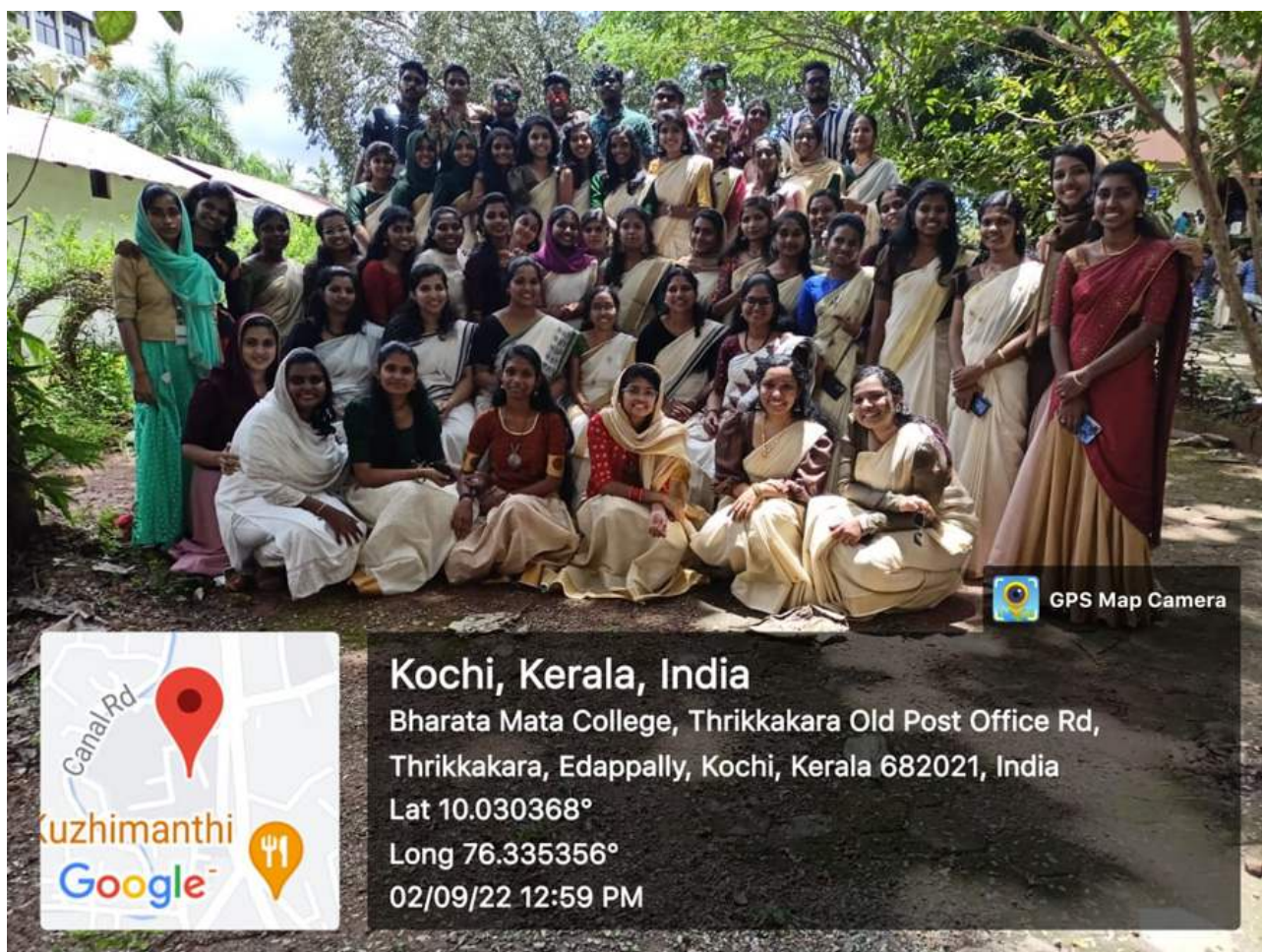
Co-ordinator: Ms. Karthika V





## *Onam celebration*

The Department of Mathematics, Bharata Mata College, Thrikkakara, conducted onam celebration on 2nd September 2022 at 10.00 AM. It was a simple and traditional celebration organized by the second year students. Dr. Seethu Varghese (H.O.D) welcomed the gathering and conveyed greetings and wishes of the festival. Dr. Lakshmi C delivered the message on onam. The students of the department made a beautiful athapookkalam in the third year classroom. The program started with a prayer song followed by various cultural activities by the students. Various games were also conducted. The students got thrilled by the presence of Maveli who appeared during the cultural programs. Onasadya for staff and students were also arranged. The celebration gave an insight into Onam, the festival of Kerala. The session was concluded with a vote of thanks by Al Azmi K M.





## Teacher's Day

Maths Association celebrated Teacher's day on September 5, 2022. Students greeted their teachers and gifted teacher's day cards to all the faculty. Teachers with great pride and joy, accepted the wishes and gifts.



## Association Inauguration & Magazine Release

The Department of Mathematics, Bharata Mata College, Thrikkakara conducted Association Inauguration on 11th October 2022 at MSW Seminar Hall with a talk on "SIX DEGREES OF SEPARATION - small world phenomenon". The occasion was honoured by the presence of Dr. Seema Varghese, Associate Professor, Department of Mathematics, Govt. Engineering College, Thrissur.

The Programme started at 10 am with a welcome note by Ms. Gifty Maria (Second year B. Sc. Mathematics-Magazine editor-2022-23), which was followed by presidential address by Principal Dr. Johnson K.M. He spoke about the importance of learning mathematical theories along with its applications and advised students to indulge in research activities.

Dr. Seethu Varghese, HoD, Department of Mathematics presented the annual report of Mathematics association for the year 2021-2022. This was followed by the inaugural session of Association 2022-2023 by Dr. Seema Varghese. Later Dr. Seema Varghese, Dr. Seethu Varghese and Principal released the magazines of 2020-2021 and 2021-2022. The Inaugural session concluded with a vote of thanks by Al Azmi of Second year B. Sc. Mathematics. Dr. Seema Varghese talked about the importance of Graph Theory in world-wide. Her topic "SIX DEGREES OF SEPARATION - a small world phenomenon" was an example for it. This was followed by an interactive session with the speaker. Students actively participated in this session. The session was very enlightening and beneficial to the students. The

talk concluded with a thanksgiving song by Priya Elizabeth Abraham of 1st M.Sc. Mathematics. 110 participants attended the program.

Co-ordinators: Dr. Seethu Varghese

Ms. Disna Mary Joseph

Ms. Nishamol Francis





## *Christmas Celebration*

The Department of Mathematics, Bharata Mata College, Thrikkakara, conducted Christmas celebration on 23rd December 2022 at 10.00 AM. Dr. Seethu Varghese (H.O.D) welcomed the gathering and shared Christmas message and greetings. The students had beautifully decorated the classrooms with stars, bells, balloons, streamers etc. A beautiful Christmas tree and a crib were also set up. The program started with a prayer song followed by various cultural activities by students and faculty members. A student attired as Santa Claus attracted the attention of the students. A delicious meal for everyone was also arranged. Christmas cakes were also distributed. It was a joyous programme for everyone.



## *Association Day & Merit Day*

The Department of Mathematics, Bharata Mata College, Thrikkakara, celebrated the Association Day and Merit Day - EKTARA 2023 on 17th March 2023 with various activities. The programme started by 10 am with a prayer by maths choir. The program began with a welcome address by Ms. Alsha Joseph, Association-in-charge followed by address by Dr. Seethu Varghese, H.O.D, Department of Mathematics. After that Dr. Johnson K M, Principal, BMC delivered the presidential address.

PG Rank holders Hima Manoj K and Namitha Padmajan were honoured during the event. A+ grade winners of the 2019-22 UG & 2020-22 PG batch were given mementos for their meritorious achievements. Prizes were given to students who grabbed medals in MG university arts and sports championships. The session concluded with vote of thanks by Al Azmi, Association Secretary. This was followed by experience sharing by UG 3rd year and PG 2nd year students. Teachers also shared their experiences.

Various games were played and at about 12.30 pm lunch was served for everyone in the auditorium. By 1.30 pm, various cultural programs arranged by the students of all classes were performed. The programme came to an end by 3.30 pm and about 120 participants were there for the day.





## Department Non-Academic activities

### Industry Interaction - Skill Development Talk

**Date and Time** : July 7, 2022, 11.30 am - 01.00 pm

**Coordinator** : Dr. Lakshmi C

**Resource Person/s** : Ms. Latha R, Program Director and Talent Consultant, IBM Software India Labs

The Department of Mathematics, Bharata Mata College Thrikkakara organised an industry Interaction talk on 7th July 2022 at Audio Visual room. The session was handled by Ms. Latha R, Program Director and Talent Consultant, IBM Software India Labs. It was attended by 47 students from Mathematics Department and 12 students from Computer Science department.

The program began at 11.30am with Dr. Lakshmi C, Asst. Professor, Department of Mathematics, welcoming the audience. The session was presided by the Principal, Dr. K. M. Johnson who stressed the importance of such interactions for the upliftment of the students. As the speaker Ms. Latha R was out of town, she joined online through WebEx platform. She spoke about the importance of software industry and the skills required for a career in software industry. She interacted with the students and clarified their doubts regarding a career in this field. She also provided the students with materials to work on for developing some easy software applications. The program concluded at 1pm with vote of thanks by Ms. Aleena P Saju, 5th semester BSc Mathematics student.



# *International Workshop on Variants of Graph Domination (IWVGD - 2022)*

**Date and Time** : November 17 - 19, 2022

**Coordinator** : Dr. Seethu Varghese

The Department of Mathematics, Bharata Mata College Thrikkakara (BMCT) organized a three day International Workshop on Variants of Graph Domination (IWVGD) 2022 co-sponsored by Kerala State Council for Science Technology and Environment (KSCSTE) from November 17th to 19th, 2022. The workshop served as a good platform to introduce the concept of Domination in graphs to upcoming researchers, with main focus on some variants of Graph Domination such as Power Domination, Roman Domination and Secure Domination. It also helped in creating a collaboration network of researchers in Domination Theory and its applications.

The workshop was convened by Dr. Seethu Varghese, Asst. Prof and Head, Department of Mathematics, BMCT. The advisory committee consisted of Prof. Andreas M Hinz, Ludwig-Maximilians-Universität-München, Munich, Germany, Prof. Ambat Vijayakumar, Emeritus Professor, Department of Mathematics, CUSAT, Dr. Manoj Changat, Professor and Head, Department of Future Studies, Kerala University, Dr. Indulal G, Professor, Department of Mathematics, St. Aloysius College, Edathua and Dr. TamizhChelvam T, Emeritus Scientist, Manormaniam Sundaranar University, Tamil Nadu.

The workshop was inaugurated on 17th November 2022 by Mr. S. Vasudevan, Scientist G, Director (Science and Technology), NPOL, DRDO. The Principal of the college, Dr. K.M. Johnson presided over the function. Dr. Seethu Varghese, Department of Mathematics welcomed the gathering and Prof. Ambat Vijayakumar, Emeritus Professor, CUSAT, Dr. Sindhu Joseph, Research Dean and Dr. Ajay Joseph, IQAC Coordinator offered felicitations.





The workshop included 13 invited lectures by National and International experts in this field. International speakers included Prof. Leslie Hogben (Associate Dean for Graduate Studies and Faculty Development, Iowa State University, Ames, US), Prof. Glenn H Hurlbert (Virginia Commonwealth University, Virginia, US) and Prof. Paul Dorbec (University of Caen Normandy, France). Their sessions were streamed online at the venue. The National speakers who handled the offline sessions were Dr. Ambat Vijayakumar (Emeritus Professor, Department of Mathematics, CUSAT), Dr. Seema Varghese (Associate Professor, Department of Mathematics, Govt. Engineering College, Thrissur), Dr. Manju K Menon (Associate Professor & Head, Department of Mathematics, St. Paul's College, Kalamassery), Dr. Aparna Lakshmanan S (Associate Professor, Department of Mathematics, CUSAT), Dr. Tijo James (Assistant Professor, Department of Mathematics, Pavanatma College, Murickassery) and



Dr. Seethu Varghese (Assistant Professor & Head, Department of Mathematics, Bharata Mata College, Thrikkakara). The workshop also included problem solving sessions and session by the participants to discuss their research problems.

The program concluded on 19th November, 2022. Prof Michel Waldschmidt, Sorbonne Universite, Institut Mathematique de Jussieu, France was the guest of honour for the valedictory function. He also gave a talk on 'The square root of 2, the Golden Ratio and the Fibonacci sequence'. The Manager of the College, Rev. Fr. Abraham Oliapurath presided over the valedictory function. Prof. Ambat Vijayakumar offered felicitations. The program concluded with a vote of thanks by the convenor of the workshop, Dr. Seethu Varghese.

The workshop was attended by 47 participants from different parts of the country and it was

well received by the participants. The Department of Mathematics, Bharata Mata College Thrikkakara is grateful to KSCSTE for funding this workshop.



# Orientation for UG students

**Date and Time** : December 9, 2022, 02.00 pm

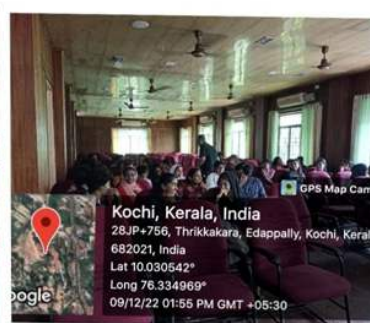
**Coordinator** : Dr. Lakshmi C

**Resource Person/s** : Dr. Bajeel P.N, Assistant Professor, Department of Mathematics, KAHM Unity Women's College, Manjeri

**Number of Participants** : 45

The Department of Mathematics, Bharata Mata College, Thrikkakara, conducted an orientation program titled "Mathematical Careers in Business, Industry and Government" on 9th December 2022 at 02.00 PM. Dr. Bajeel P.N, Assistant Professor, Department of Mathematics, KAHM Unity Women's College, Manjeri was the resource person for the program.

Dr. Seethu Varghese (H.O.D) welcomed the gathering. Dr. Lakshmi C gave a brief introduction about the resource person. Dr. Bajeel spoke about the scope of Mathematics in and outside industries. He also gave a good insight about the premier institutes for higher education in Mathematics in India and various institutes providing job opportunities for graduates and post graduates. The session was very enlightening and beneficial to the students. An interactive session with the speaker was conducted after the talk. Students actively participated in the interactive session. The session was concluded with vote of thanks by Dr. Seethu Varghese (H.O.D).





## *Orientation for Higher Studies*

**Coordinator** : Dr.Seethu Varghese

**Resource Person/s** : Dr.Lakshmi C

**Number of Participants** : 33

The orientation program for higher education was organized by the Department of Mathematics, Bharata Mata College Thrikkakara to equip the final year BSc Mathematics students with essential knowledge and guidance for their academic and career pursuits. The resource person for the program was Dr. Lakshmi C, Assistant Prof. Department of Mathematics. The program aimed to provide a comprehensive overview of higher education options, opportunities, and resources available to students in the field of mathematics.

Dr. Lakshmi presented an overview of the BSc and MSc Mathematics programs offered by the various institutes of national and international repute. She provided information about scholarships and financial aid opportunities available for BSc Mathematics student and explained the eligibility criteria for various scholarships. She further gave a comprehensive overview of career options and opportunities for mathematics graduates and discussed potential career paths in academia, research, industry, finance, data analysis, and more.

The orientation program was well appreciated by the students. They opined that it helped them gain the necessary knowledge and guidance for their academic and career journey. By providing valuable insights into higher education options, scholarships, career prospects, and resources, the program aimed to inspire students to pursue their passion for mathematics and excel in their chosen paths.



# Science Exhibition - EUREKA 2023

**Date and Time** : February 28-29, 2023

**Coordinator** : Dr. Seethu Varghese

**Number of Students** : 60

EUREKA 2023 - A journey through Science, was jointly organized by all science departments of Bharata Mata College Thrikkakara in connection with National Science Day on February 28, 2023. The official programme was conducted at College Auditorium and the function was inaugurated by the Manager. Inter-school quiz competition was held at college auditorium and prizes were distributed to the winners. The Department of Mathematics, Bharata Mata College Thrikkakara conducted a Mathematics exhibition as a part of EUREKA 2023 on February 28 & 29, 2023. The exhibition aimed to showcase the role of Mathematics in various fields and promote the importance of Mathematics in our daily lives. The event was organized in the department and it was open to students from nearby schools, students of the college, faculty members, and visitors. Around 60 students from 3 schools and colleges visited the exhibition stalls.

The exhibition featured a variety of displays and exhibits that demonstrated the beauty and relevance of Mathematics. There were around 50 exhibits that were set up, including exhibits that demonstrated the beauty of Mathematics, such as the Golden Ratio, Fibonacci sequence, and the Mandelbrot set. Displays that demonstrated the use of Mathematics in real-world problems such as the Konigsberg Bridge Problem and Netflix problem were a highlight of the program. There were several games to showcase the fun side of Mathematics. It included displays on puzzles, games, and recreational Mathematics. There were interactive exhibits that allowed visitors to play with various puzzles and games, such as Sudoku, Rubik's cube, and tower of Hanoi. On a conclusive note, The Mathematics exhibition conducted by the Department of Mathematics at Bharata Mata College Thrikkakara was a great success. It was a great opportunity for students, faculty members, and visitors to learn about Mathematics and its various applications. The management applauded the Department of Mathematics for organizing such a wonderful event.



## Day Observations

### *National Statistics Day*

**Date and Time** : June 29, 2022

**Coordinator** : Dr.Vinitha Xavier K

**Resource Person/s** : Mr. Rasin R.S, Assistant Professor, St.Thomas College, Thrissur.

**Number of Participants** : 54

The Department of Mathematics, Bharata Mata College, Thrikkakara, celebrated the 16th National Statistics Day on 29th June 2022 with a talk on “Introduction to Data Science”. The day was observed with the intention of stressing the importance of Statistics in today’s scenario and create awareness amongst students about the vast career opportunities in the field of Statistics. The speaker of the day was Mr. Rasin R.S, Assistant Professor, St. Thomas’ College, Thrissur.

The program began with a welcome note by Dr. Lakshmi C., Assistant Professor, Dept. of Mathematics. Dr. Johnson K.M, Principal presided the function and spoke about the scope of statistics and Data Science. Dr.Vinitha Xavier. K gave a brief introduction about the resource person. Mr. Rasin spoke about the scope for mathematics graduates in and outside data handling, and how to learn various software like python, SPSS and R. He also spoke on how to improve one’s career in this field with the aid of short term online courses.

The session was very enlightening and beneficial to the students. An interactive session with the speaker was conducted after the talk. Students actively participated in the session and it helped them clear many doubts. The talk concluded with vote of thanks by Keerthi Prasad, MSc Student, Department of Mathematics.





# *Fibonacci Day*

**Date and Time** : November 23, 2022  
**Coordinator** : Disna Mary Joseph  
**Resource Person** : Dr. Seethu Varghese  
**Number of Participants** : 27

The Department of Mathematics, Bharata Mata College, Thrikkakara, celebrated the Fibonacci Day on 23rd November 2022 with various activities. The program began with a welcome note by Azmin Abdul Salam, I BSc student, Department of Mathematics. Then Dr. Seethu Varghese, H.O.D, Department of Mathematics talked on the importance of Fibonacci numbers. After that first year students, Sarah Marianne Joseph and Nandagopal B did a presentation on Fibonacci Sequence in nature with ppt. The presentation helped the students to learn more about Fibonacci sequence and golden ratio. This was followed by fun games relating to Fibonacci sequence. The session concluded with vote of thanks by Sarah Marianne Joseph, I BSc student. Students

also did a mini exhibition on Fibonacci sequence with beautifully arranged chart papers.



# National Mathematics Day

Date and Time : December 22, 2022

Coordinator : Disna Mary Joseph

Resource Person/s : Dr. Seethu Varghese, Ms. Sarah Marianne Joseph ,  
1 BSc student

Number of Participants : 55

The Department of Mathematics, Bharata Mata College, Thrikkakara, celebrated the National Mathematics Day on 22nd December 2022 with a presentation based on Ramanujan's life and achievements and a movie show "The man who knew infinity", which narrates the Ramanujan's life.

The program began with a welcome note by Dr. Seethu Varghese, HOD, Department of Mathematics. This was followed by a presentation by Ms. Sarah Marianne Joseph ,1 BSc Student, Department of Mathematics based on Ramanujan's life. The presentation helped the students to know more about Ramanujan, his early life and his contributions to Mathematics. The session was very interesting and beneficial to the students. After the presentation, "The man who knew infinity", movie based on Ramanujan's life was streamed. The movie show really helped the students to know about Ramanujan and his passion for mathematics.



## *Bridge course*

**Date/s of Bridge course : September 12-16,2022**

**Teacher In charge : Ms. Aswathy M A**

**Course conducted by Department of Mathematics, 2022-23**

A bridge course for newly admitted UG students is conducted every year before the commencement of the first semester classes. The main objective of the course is to bridge the gap between the subjects studied at Pre-university level and subjects they would be studying in graduation. The syllabus for the course is framed in such a way that they get basic knowledge on the subjects which they would be learning through graduation.

A curriculum is framed separately for Bridge Course. During the first week after the commencement of the classes, the bridge course curriculum is delivered to the students. Bridge Course was conducted for the first year students of B.Sc. Mathematics (2022-25 batch) in the second week of September 2022. A post bridge course test is conducted after the completion of the bridge course syllabus to assess the ability of each student. Entry Level Test was conducted on 21.10.2022 and identified advanced and slow learners. Suggestions were given to students for improvisation.

Teacher in charge: Ms.Aswathy M.A





## *Entry Level Examination*

Category	No of Students
Advanced Learners	02
Average Learners	12
Slow Learners	04
Total	18

## *Mentoring Report*

The main motive of the mentoring sessions held is to provide more contact hours between the teacher and students, to maintain proper academic and attendance records of the students, to minimize dropout rates among students and to identify the slow and advanced learners. The mentoring system of Department of Mathematics is an initiative of the Mentoring Cell. Every student in the department can freely, without hesitation conversate with his/her mentor teacher. The mentor often meets with their mentees and enquires about difficulties in their life which distract them. Motivation classes are held, students who face serious distractions are sent to the counselling psychologist of the college, apart from the counselling and guidance provided by the mentor teacher. The academic as well as attendance records of students are collected. The students who face concentration issues are given enough attention. Parents are contacted if necessary for the upliftment and progress of the students. The mentor finds the slow and advanced learners and deals with them accordingly. If needed, necessary remedial classes are arranged.

## Department Mentor list 2022-2023

SI No.	Name of the Mentor	No of Mentees
1	Dr. Seethu Varghese	12
2	Dr. Lakshmi C	12
3	Disna Mary Joseph	14
4	Alaka Mohan	12
5	Alsha Joseph	15
6	Aswathy M A	13
7	Agaja Narayanan	11
8	Dr.Vinitha Xavier K	13

## Addon / Certificate courses 2022-2023

### **Course name: Basics of Statistics using Microsoft Excel**

**Co-ordinator :Dr. Lakshmi C**

To be familiar with statistical tools for data analysis. To learn how to use excel for tabulation and analysis of data. Have practical experience in real time data analysis using statistical formulae in Excel.

#### **Program Specific outcome**

- To understand the Statistical functions in Microsoft Excel
- To apply Excel for handling and analyzing data.

Add on course benefits the students with something extra beyond their regular academics. It serves as an added advantage. Each department of Bharata Mata College offers a 30 hours Add on course for the first semester degree students of batch 2022-25.

The department meeting conducted in June 2022 decided to introduce the Add on course in

Basics of Statistics using Microsoft Excel, conducted by MATHLAB Cochin for the academic year 2022-23. An MOU was signed with MATHLAB, Cochin as first party and Principal, Bharata Mata College Thrikkakara as second party. Nineteen students of first BSc Mathematics were admitted to this course. The course duration was 30 hours. Classes were taken in the Library computer lab. The classes were handled by Mr. Aravind and were conducted on every Wednesday and Thursday (3:30pm – 4:30pm) from 26/10/2022 to 31/03/2023. The course evaluation was conducted in the last week of March 2023. An internal exam and certificate exam were conducted. The students were also awarded a well earned certificate on their successful completion of the course.

**Co-ordinator : Disna Mary Joseph**

### ***Course name: Mathematical Typesetting Using Latex***

Objective: To understand the features and uses of the typesetting program LATEX. To learn how to create a scientific document using LATEX. Enable students to create a research paper or Project using LATEX. Teach the students to create a presentation using Beamer in LATEX.

#### **Program Specific outcome**

- To learn the typesetting Program LATEX
- To create a scientific research paper or project using LATEX
- To create presentation in beamer.

Report of online LaTeX Add-On Course conducted by Mathlab Research, Edapally for 4th Semester PG Students of Bharata Mata College Thrikkakara

#### **1. Introduction**

This report summarizes the 6-month long online LaTeX add-on course conducted by Mathlab Research at Edapally for the 4th semester PG students of Bharata Mata College Thrikkakara. The course aimed to enhance the students' knowledge and proficiency in LaTeX, a typesetting system widely used in academia and research for creating high-quality documents.



## 2. Course Overview

The LaTeX add-on course spanned a duration of 6 months and was conducted entirely in an online mode. It comprised of theoretical lectures, practical sessions, and interactive discussions. The course curriculum was carefully designed to cover various aspects of LaTeX, ranging from basic concepts to advanced topics. The goal was to provide students with comprehensive knowledge and hands-on experience in using LaTeX for document preparation, all in a virtual learning environment.

## 3. Course Objectives

The primary objectives of the online LaTeX add-on course were as follows:

- a) Introduce students to the LaTeX typesetting system and its advantages in an online setting.
- b) Familiarize students with the LaTeX syntax and document structure through virtual lectures and demonstrations.
- c) Develop skills in creating professional-looking documents, including research papers, reports, and presentations, using online LaTeX editors.
- d) Provide hands-on experience in using LaTeX packages for mathematical equations, figures, tables, and references in an online environment.
- e) Enhance students' ability to troubleshoot common LaTeX errors and issues remotely.
- f) Promote collaboration and sharing of LaTeX documents using online tools and version control systems.
- g) Encourage best practices for organizing and managing large LaTeX projects in an online context.

## 4. Teaching Methodology

The teaching methodology for the online LaTeX add-on course involved a combination of virtual lectures, interactive discussions, and practical exercises. The theoretical lectures provided in-depth knowledge of LaTeX concepts, while the practical sessions allowed students to apply their learning and gain proficiency through hands-on practice using online LaTeX tools. The course instructors encouraged active participation, facilitated discussions through

video conferencing platforms, and utilized collaborative online platforms for document sharing and version control.

## 5. Course Assessment

To assess the students' progress and understanding, online assignments and quizzes were conducted throughout the course. The assignments required students to create documents using online LaTeX editors. These assessments aimed to evaluate the students' ability to apply the learned concepts effectively and produce high-quality LaTeX documents remotely.

## 7. Conclusion

The 6-month long online LaTeX add-on course conducted by Mathlab Research at Edappally for the 4th semester PG students of Bharata Mata College Thrikkakara was successful in achieving its objectives. The course equipped the students with comprehensive knowledge of LaTeX and enhanced their skills in creating professional documents, even in an online setting.



## MOOC Courses Attended details

Sl No.	Name of the Student	Platform (SWAYAM, Edu net etc.)	Name of the Course	Duration
1	ANNA MARIA THAMPI	MOOC	Organic Farming	21-22
2	ANTONY SALWIN JOB M S	MOOC	Organic Farming	21-22
3	ANUJITH RAJU	MOOC	Organic Farming	21-22
4	APARNA SHAJI	MOOC	Organic Farming	21-22
5	ASWATHY C S	MOOC	Organic Farming	21-22
6	ATHIRA A S	MOOC	Organic Farming	21-22
7	AYSHA NASRIN	MOOC	Organic Farming	21-22
8	GIFTY MARIA SAJU	MOOC	Organic Farming	21-22
9	KRISHNAPRASAD S	MOOC	Organic Farming	21-22
10	KRISHNAVENY S	MOOC	Organic Farming	21-22
11	NAVEEN K	MOOC	Organic Farming	21-22
12	NEENA JAYADEVAN	MOOC	Organic Farming	21-22
13	NIDHIYA ANTONY	MOOC	Organic Farming	21-22
14	SALINI K S	MOOC	Organic Farming	21-22
15	SUMEENA K A	MOOC	Organic Farming	21-22
16	VARUN A	MOOC	Organic Farming	21-22
17	VIGHNESH MURALEDHAR	MOOC	Organic Farming	21-22
18	ABDUL AHAD AC	MOOC	Organic Farming	21-22
19	AISWARYA V S	MOOC	Organic Farming	21-22
20	AKSHAY K L	MOOC	Organic Farming	21-22



21	AL AZMI K M	MOOC	Organic Farming	21-22
22	ALEENA MUHAMMED ALI	MOOC	Organic Farming	21-22
23	AMALESH P A	MOOC	Organic Farming	21-22
24	ANN MARY. M. M	MOOC	Organic Farming	21-22
25	AYSHA JEFRIN P N	MOOC	Organic Farming	21-22
26	DHARSHANA A.K.	MOOC	Organic Farming	21-22
27	EDWIN JOLLY	MOOC	Organic Farming	21-22
28	FATHIMATHUL SAHALA N A	MOOC	Organic Farming	21-22
29	JYOTHIKA K. JAYAN	MOOC	Organic Farming	21-22
30	K.AASNA	MOOC	Organic Farming	21-22
31	RIZVANA M A	MOOC	Organic Farming	21-22
32	SUJA JAYAKUMAR	MOOC	Organic Farming	21-22
33	VENKIDESH NARAYANAN. S. B	MOOC	Organic Farming	21-22
34	VISHNU SIJU	MOOC	Organic Farming	21-22



## *Department level Infrastructure*

• Laptops	:	2
• PCs	:	11
• Projectors	:	6
• Printers	:	4
• Furniture & Fittings		
• Desk	:	35
• Bench	:	41
• Tables	:	56
• Chairs	:	64
• Shelf	:	6

## *Department Meetings*

A Department must conduct meetings for the smooth functioning of all its activities. The Department of Mathematics conducts timely meetings which help the faculty to exchange ideas, discuss about the short comes and merits that has taken place in the last month. These meetings help to improve faculty performance and reduce their stress. TheHoD/HoD in Charge puts forward the upcoming agenda and discusses on how to implement tools to attain the goal. The class in charge teachers report about the working of each class in the meeting and necessary actions are taken. Together as a team the department puts in effort to tackle each situation appropriately. The minutes of the department meetings are also maintained.

- Main topics for discussion:
  - Students' attendance
  - Students' performance in the department activities
  - Students' improvements in the examination
  - Review of last month's activities
  - Plan the activities to be done in this month



## Department Meetings

Sl No.	Date and Time of Meeting	Major Agenda
1	17/05/2022; 05:00 pm (Online)	Assign UG\PG faculty, paper division among faculty.
2	11/07/2022; 03.30 pm	Initial Plans on Workshop.
3	11/08/2022; 03.30 pm	Plans on Independence day.
4	23/08/2022; 03.30 pm	Assign UG\PG faculty, paper division among faculty, Plans on Onam celebration and Plans on Workshop
5	12/09/2022; 03.30 pm	Welcoming new faculty, Plans on association inauguration, Plans on workshop
6	06/10/2022	Farewell to Ms. Karthika, Assignment of duties, Conduct of Association inauguration.
7	19/10/2022; 03.30 pm	Participation on Harithamithrasena, Internal exam valuation, Plans on Workshop, Paper Revision
8	25/11/2022; 03.30 pm	Plans on Workshop, Internal Exams for PG students
9	07/12/2022; 03.30 pm	National Mathematics Day Celebration, Christmas Celebration
10	20/12/2022; 01.00 pm	Discussion on Council Meeting decisions held on 19/12/2022
11	03/01/2023; 03.30 pm	Discussion on Arts Day, Paper revision.
12	19/01/2023; 03.30 pm	Discussion on Alumni Meeting, Commemoration of Ancimol.
13	31/01/2023; 03.30 pm	Discussion on Council Meeting, Portions Revision.
14	22/03/2023; 03.30 pm	Discussion on Council Meeting.

# Alumni Meet

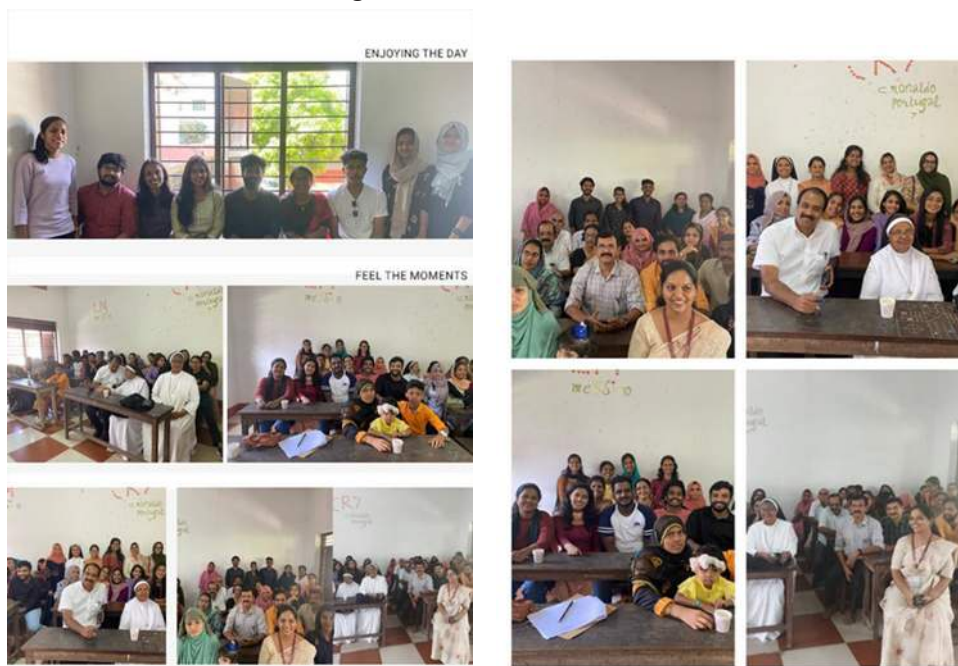
In connection with the Alumni meet organized by the College on 26.01.2023, the Department of Mathematics organized a department level meeting for its alumni to facilitate and strengthen the alumni activities.

64 alumni from various batches were present for the meeting. The retired members of faculty including Sr. Tessy Thomas, Dr. Sr. Jaya Rose, Prof. Paul Isaac and Prof. K.V. Thomas graced the occasion with their presence.

The meeting started at 10.00 am in the Department of Mathematics, with a welcome address by the Head of the Department, Dr. Seethu Varghese. She spoke about the importance of Alumni interaction and the need to strengthen the Alumni activities for the betterment of the Department. The Alumni introduced themselves batch wise and shared their memories and wonderful experiences during their life at BMC. The presence of retired faculty members struck a chord with the Alumni. The retired teachers also shared their beautiful memories of year long association with the college.

The meeting concluded at 11.30 am, after which the Alumni proceeded for the common Alumni meet at the College Auditorium.

Co-ordinator: Dr. Seethu Varghese



Alumni Meet 2023 🎉

It is very important to have a good parent teacher association to understand and help our students better. The Department of Mathematics has held one online open house meet for the degree final year students and offline open house meetings for the 1st , 2nd and 3rd year degree students separately. The parents and teachers communicate their ideas and put in considerable effort for the overall development of the student and the college as well. The Head of department together with all subject teachers make an active conversation with the parents together with the student about the distractions that keep him/her away from the goal and necessary steps are taken to address the problem if any. Feedbacks from parents are sought and suggestions are considered

### Open House Meetings

1	UG 2020 - 23	07/11/2022; 01:00 pm
2	UG 2021- 24	01/02/2023; 01:00 pm
3	UG 2022 - 25	18/01/2023; 01:00 pm





## Student achievements - co curricular / Sports activities

Sl No	Name of the Student	Class	Achievement
1	Amritha E P	1 MSc Mathematics	Kerala state senior powerlifting championship 2022 held at Kozhikode ,GOLD Senior national powerlifting championship 2022 held at Bhilai .Interstate GOLD,Open overall SILVER MG University intercollegiate powerlifting championship 2022-23 held at Newman College.Thodupuzha,GOLD,STRONG WOMEN of MG University title All India Inter University Powerlifting championship 2022-23 held at Dharmashala,HimachalPradesh,BRONZE
2	Priya Elizabeth Abraham	I MSc Mathematics	BMC Arts fest-Western Vocal Solo - Second prize, Pencil drawing - Third prize
3	Neenu Varghese	I MSc Mathematics	BMC Arts fest- Essay writing Malayalam - First prize
4	Arjun Suresh	III BSc Mathematics	MG University 60 kg champion, Mr. Ernakulam 60 kg champion, All India Inter university top 20 NPC 60 kg champion
5	JismyNazar	III BSc Mathematics	MG University Kalolsavam - Oppana - Third prize
6	Aysha Jeffrin P N	II BSc Mathematics	MG University Kalolsavam - Oppana - Third prize
7	Vighnesh Muraledhar	II BSc Mathematics	BMC Arts fest - Spot painting - Second prize
8	Abdul Ahad A C	II BSc Mathematics	BMC Arts fest - Mappilappaattu - Second prize
9	Aleena Muhammed Ali	II BSc Mathematics	BMC Arts fest - Group song Indian - Third prize
10	Fathima P A	I BSc Mathematics	BMC Arts fest - Elocution Hindi - First prize, Poetry Writing English - Third prize, Elocution Malayalam - Third prize
11	Azmin Abdul Salam	I BSc Mathematics	BMC Arts fest - Mappilappaattu - Second prize



12	Nandagopal B	I BSc Mathematics	BMC Arts fest - Light Music Vocal Male - Second prize, Group song Indian - Third prize
13	Dhanya Jose	I BSc Mathematics	BMC Arts fest - Group song Indian - Third prize
14	Vishnu K M	I BSc Mathematics	BMC Arts fest - Group song Indian - Third prize
15	Hanna Thomas	I BSc Mathematics	BMC Arts fest - Group song Indian - Third prize
16	Dhiya Fathima C S	I BSc Mathematics	BMC Arts fest - Group song Indian - Third prize







## Faculty Attended Programmes

FDPs/ STTPs/Workshops/Seminars / Conference/ Webinar

Total Number of FDPs/ STTPs : 1

Total Number of Workshops : 1

Total Number of Seminars / Conference : 1

Total Number of Webinar : 1

Name of faculty	Name of Programme	Date/s	Conducting Agency	FDPs/ STTPs/ Workshops/ Seminars / Webinar
Dr. Seethu Varghese	Two week Refresher course in Applicable Mathematics	26 July - 08 August, 2022	Teaching Learning Centre, Ramanujan College, University of Delhi	FDP
Dr. Seethu Varghese	International Workshop on Variants of Graph Domination (IWVGD - 2022)	17 - 19, November 2022	Department of Mathematics, Bharata Mata College, Thrikkakara (Co-sponsored by KSCSTE)	Workshop
Dr. Seethu Varghese	National Seminar on Number Theory and Discrete Mathematics	07 March 2023	Department of Mathematics, Union Christian College, Aluva	Seminar
Dr. Seethu Varghese	MSP Lecture Series Session -1 in honor of Prof. Severino V Gervacio	01 April, 2023	The Mathematical Society of Philippines	Webinar

## Research Contributions:

### Publications – Faculty

Name of the Faculty	Type of Publication (Contribution to Book, Research Publication, Conference Proceedings)	Listing of the publication (ISBN BOOK, UGC Care List1, Scopus, Web of Science)	Title of the Paper or Book Chapter	Journal Name or Publisher Name	ISSN or ISBN Number
Dr. Seethu Varghese	Research Publication	SCIE, Scopus	Power Domination in Mycielskian of Spiders	AKCE International Journal of Graphs and Combinatorics, 19 (2), 154 - 158, (2022)	ISSN: 0972-8600

## Publications - Research Scholars

### Publications – Faculty

Name of the Faculty	Type of Publication (Contribution to Book, Research Publication, Conference Proceedings)	Listing of the publication (ISBN BOOK, UGC Care List1, Scopus, Web of Science)	Title of the Paper or Book Chapter	Journal Name or Publisher Name	ISSN or ISBN Number
Ancy Varghese	Research Publication	Scopus	Study on Intuitionistic Fuzzy Abundant Semigroup	Turkish Journal of Computer and Mathematics Education, Vol.14 No.02 (2023),35-46	e-ISSN 1309-4653



### Resource Person in Seminars

Name of the Faculty	Type of Program Attended (FDPs/ STTPs/ Workshops/ Seminars/ Conference/ Webinar)	Date/ Dates of Program	Title of the Program	Institution or agency organized the Program
Dr. Seethu Varghese	Seminar	02 November, 2022	Association Inauguration	Department of Mathematics, Carmel College, Mala
Dr. Seethu Varghese	International Workshop	17 - 19 November, 2022	International Workshop on Variants of Graph Domination (IWVGD - 2022)	Department of Mathematics, Bharata Mata College, Thrikkakara
Dr. Seethu Varghese	National Seminar	07 March, 2023	National Seminar on Number Theory and Discrete Mathematics	Department of Mathematics, Union Christian College, Aluva
Dr. Lakshmi C	Webinar	24 September 2022	Introduction to Numerical Analysis	Department of Mathematics, Korambayil Ahamed Haji Unity Women's College, Manjeri



## Student Projects

### UG Projects

Sl No.	Class	Name of Student	Topic of project	Research Supervisor
1	20M1101	AKSHAY V.A.	Mathematics for Machine Learning	Alsha Joseph
2	20M1103	ANGEL ROY	Interpolation	Alaka Mohan
3	20M1104	ANN MARIA SAJAN	Mathematics for Machine Learning	Alsha Joseph
4	20M1105	ARJUN SURESH		
5	20M1106	ASWATHY P. BIJU	A study on Graceful graphs	Disna Mary Joseph
6	20M1107	DEVIKA M.R.	Mathematics for Machine Learning	Alsha Joseph
7	20M1108	FARHIN V.A.	Interpolation	Alaka Mohan
8	20M1109	JISMY NAZAR	Interpolation	Alaka Mohan
9	20M1110	KEERTHANA T.R.	A Study on Data Mining	Dr. Seethu Varghese
10	20M1111	KRISHNA M.S.	A study on Graceful graphs	Disna Mary Joseph
11	20M1112	MARY BABU	Mathematics for Machine Learning	Alsha Joseph
12	20M1113	MEGHANA K.S.	Introduction to Topology of sets	Dr. Lakshmi C
13	20M1115	NANDANA RAJEEV	Introduction to Topology of sets	Dr. Lakshmi C
14	20M1116	NAVYA SUNIL KUMAR	A study on Graceful graphs	Disna Mary Joseph
15	20M1119	SHADHIL SALAM	Interpolation	Alaka Mohan

16	20M1120	SREERAMKRISH-NA K.S.	Introduction to Topology of sets	Dr. Lakshmi C
17	20M1121	SRUTHI C.K.	A Study on Data Mining	Dr. Seethu Var-ghese
18	20M1122	VIGNESH K.	A Study on Data Mining	Dr. Seethu Var-ghese
19	20M2123	AKASH K.S.	Graph Theory in Match- ing and Colouring	Agaja Narayanan
20	20M2124	ALEENA P. SAJU	Graph Theory in Match- ing and Colouring	Agaja Narayanan
21	20M2125	ANEEGHA K.A.	Mathematics for Ma- chine Learning	Alsha Joseph
22	20M2126	ANN MARY ANISH	Mathematics for Ma- chine Learning	Alsha Joseph
23	20M2127	ANN MARY JOY	A Study on Data Mining	Dr. Seethu Var-ghese
24	20M2128	ARYA SHIBU	A Study on Data Mining	Dr. Seethu Var-ghese
25	20M2129	ASHNA ANSAR	Introduction to Topology of sets	Dr. Lakshmi C
26	20M2130	ATHUL ANTONY SABU	Introduction to Topology of sets	Dr. Lakshmi C
37	20M2132	DIYATHAQUVI NOUSHAD	A study on Graceful graphs	Disna Mary Joseph
28	20M2133	FERNANDO THOMAS	Graph Theory in Match- ing and Colouring	Agaja Narayanan
29	20M2135	JISNA K.A.	Graph Theory in Match- ing and Colouring	Agaja Narayanan
30	20M2136	JOSNA ANNA K. ANTONY	Introduction to Topology of sets	Dr. Lakshmi C
31	20M2138	MUHAMMED ANAS M.A.	A study on Graceful graphs	Disna Mary Joseph
32	20M2140	NASRIN M.N.	Graph Theory in Match- ing and Colouring	Agaja Narayanan

## PG Projects

1	21M201	Aardra Rajesh	Singular value decomposition	Dr. Lakshmi C
2	21M202	Aleena Theresa Varghese	Mathematics of infectious diseases	Aswathy M A
3	21M203	Archana G.S.	Modular Lattices	Dr. Lakshmi C
4	21M204	Devika Shaji	Graph Labelling	Dr. Seethu Varghese
5	21M205	Elsa Mariya Francis	Introduction to Fractals and Iterative function system	Alaka Mohan
6	21M206	Farzeen A.	Fuzzy set theory and its applications	Disna Mary Joseph
7	21M207	Fathima A.S.	Spectral Graph Theory	Agaja Narayanan
8	21M208	Fathima Muhsina	Linear Integral Equations	Disna Mary Joseph
9	21M209	Keerthy Prasad	Topics in Coding and Cryptography	Dr. Seethu Varghese
10	21M210	Nega Martin	Matrix Lie Group	Aswathy M A
11	21M211	Nimna V.J.	Derivations on Semi-rings	Agaja Narayanan
12	21M212	Nivia Joy	A study on graceful graphs	Alsha Joseph
13	21M213	Serin Isac	Control Theory	Alaka Mohan



## Student Progression

### Students Placed (UG Batch 2019-22)

Roll No	Name of the Student	Institution Placed	CTC
19M1105	Denil John M S	Deloitte Consulting India Pvt Ltd as associate analyst	Rs.3,25,008
19M2135	Vijishiya Vijayan	Infosys as System Associate	Rs. 2.4 LPA

### Students Placed (UG Batch 2020-23)

Sl No	Roll No	Name of the Student	Institution Placed
1	20M2128	Arya Shibhu	Sutherland, Focus Edumatics
2	20M1106	Aswathy P Biju	Sutherland, Focus Edumatics, HDFC
3	20M1108	Farhin V A	Sutherland, Focus Edumatics, HDFC
4	20M2136	Josna Anna K Antony	Focus Edumatics
5	20M1113	Meghana K S	Focus Edumatics
6	20M1120	Sreeramkrishna K S	Focus Edumatics



## Students went for Higher Education

SI No	Roll No	Name of the Student	Institution opted for Higher Education	Course Name
<b>Students went for Higher Education - UG 2019 - 22</b>				
1	19M1103	Anna Sandra Varghese	Westfort Institute Of Paramedical Science	MHA
2	19M1109	Jubna A P	Bharata Mata College, Thrikkakara	MSc Mathematics
3	19M1114	Niya Philip	St. Teresa's College, Ernakulam	MSc Applied Statistics and Data Analytics
4	19M1115	Revathi C B	MA College, Kothamangalam	Msc Statistics
5	19M1116	Sethulakshmi Bhasi	Government Law College, Kozhikode	LLB
6	19M1119	Yunas K A	Engineering	Nehru College of Aeronautics and Applied Sciences Aircraft Maintenance
7	19M1121	Aiswarya P U	MA College, Kothamangalam	MScData Analytics
8	19M2123	Alex Shaju	Pondicherry University, Puducherry	MSc Statistics
9	19M2124	Amala George	St.Joseph's ITE, Karukutty	D.El.Ed Diploma in Elementary Education
10	19M2126	Athira K b	Sree Sankara College, Kalady	MSc Statistics with Data Science
11	19M2127	Azlamiya T A	St. Teresa's College, Ernakulam	MSc Applied Statistics and Data Analytics
12	19M2132	Sandra Kaladharan	Al Ameen College, Edathala	MSc Mathematics
13	19M2133	SifnaSuneer	St. Teresa's College, Ernakulam	MSc Applied Statistics and Data Analytics
<b>Students went for Higher Education PG 2020 - 22</b>				
1	20M201	Anagha M	Avila College of Education, Edakochi	BEd
2	20M205	Elizabeth George M	S.A.M College of Education, Poothotta	BEd
3	20M209	Rosemary Benny	St. Thomas College of Teacher Education, Thodupuzha	BEd

## Teaching Learning Innovative practices in the department

Teaching and learning innovative practices are introduced to raise the curiosity of a student.

### Methodology of Teaching & Learning

1. Completes the syllabus in time, if needed by arranging special classes.
2. Remedial coaching to weak students and advance coaching to outstanding students.
3. Discussion of the students in small groups in the presence of teachers.
4. Enrichment programme by faculty members once in a semester.
5. Seminars are taken by students, both UG and PG.
6. For each Module the P G students have internal examination and if time permits. There will be model examination (That is 4 Exams per course).
7. Regular assignments and periodical test papers.
8. Giving class notes prepared by faculty members.
9. Giving pictorial video presentations on relevant topics through class whatsapp groups.
10. Giving previous years question papers for analysis and discussion.

The following innovative practices are undertaken by the faculty members of Mathematics department for improving teaching and learning experience

Innovative Practices	Outcome
Lecture method	Hands on experience, Peer-to- peer Learning Experiential learning, Collaborative Learning
Student Seminars	Motivating students for self-Study and Group Study.
Course Assignments	Encourage student collaboration through supplement learning
Communication Skills	Improve the presentation and speaking skills in group discussion as well as in interviews faced.
Enrichment programmes/Seminars/ Webinars/ workshops	Engages students by using real-world challenges, problems, and scenarios to evoke critical thinking, problem-solving, collaboration, and self-management
NPTEL Lectures	Promote self-learning and to share knowledge among students



## Details of Research Centre

The Department of Mathematics got approved as a Research Centre in Mathematics in 2006. Thrust areas of the research are Fuzzy Set Theory, Soft Set Theory, Rough Set Theory, Fuzzy Algebra, Fuzzy Topology, Fluid Dynamics, Graph Theory & Numerical Analysis. Dr. Rosa M V, Dr. KV Thomas and Dr. Paul Isaac are the approved research guides from the centre. To our great reputation, ten students got their Ph.D. from this centre and more than 50 research publications by the faculty members in national/international journals till date. Dr. Seethu Varghese, HOD has been recognised as MG University Research Guide in Mathematics on 04/11/2022. A new research student has joined the Research Centre under the guideship of Dr. Seethu Varghese on 13th March. At present, 10 research scholars (4 full time & 6 part time) are pursuing their Ph.D from the centre. Except one, all have completed Ph.D Course work programme. In the academic year 2022-23, the centre has 7 paper presentations and 1 publication in scopus indexed journals, to its credit. The Research Centre organised a workshop - International Workshop on Variants of Graph Domination (IWVGD-2022) during 17 - 19 November 2022 under the co-sponsorship of KSCSTE. Dr. Seethu Varghese was the convener of the workshop. 47 participants from various institutes of the country attended the workshop.

List of Research Guides:

1. Prof.(Dr.) Paul Isaac (Retired on 31/03/2022)
2. Prof.(Dr.) K. V. Thomas
3. Dr. Seethu Varghese







GPS Map Camera

Thrikkakara, KL, India  
 NGO Quarters Kudilumukku Road,  
 Kanayannur, Thrikkakara, 682021, KL, India  
 Lat 10.030184, Long 76.335672  
 02/11/2023 02:46 PM GMT+05:30  
 Note : Captured by GPS Map Camera



GPS Map Camera

Thrikkakara, KL, India  
 Thrikkakara Old Post Office Road,  
 Kanayannur, Thrikkakara, 682021, KL, India  
 Lat 10.029859, Long 76.335367  
 02/11/2023 03:08 PM GMT+05:30  
 Note : Captured by GPS Map Camera

	1	2	3	4	5
1	SV	DMJ	LC	AM	NF
2	LC	SV	AM	DMJ	NF
3	SV	LC	NF	DMJ	AM
4	NF	AM	DMJ	SV	LC
5	DMJ	SV	NF	AM	LC

## List of Research Scholars

SI No	Name	Part Time/ Full Time	Topic	Guide	Year of Admis- sion
1	ANCY VAR-GHESE	Full Time	Study on Fuzzy Set Theory in Abundant Semigroup	Dr. Paul Isaac	2017
2	DEEPA S	Full Time	A study on Algebraic Structures of Complex Fuzzy Sets	Dr. Paul Isaac	2018
3	BINCY C J	Full Time	A Study on Laplacian Spectrum of graphs	Dr. K V Thomas	2020
4	MARIA C JOY	Full Time	A Study on Fuzzy Graph Theory and its Applications	Dr. Paul Isaac	2020
5	GOLDA MARY JOSEPH	Part Time	A Study on Cayley Fuzzy Graphs	Dr. Paul Isaac	2018
6	MILY MARY SLEEBAK	Part Time		Dr. K V Thomas	
7	JAIS KURIAN	Part Time	A Study of Positive Definite Completable Graphs	Dr. K V Thomas	2017
8	JENCY JOHN	Part Time	Application of multi-fuzzy set in Algebra	Dr. K V Thomas	2018
9	JEEMA JOSE	Part Time	Fuzzy and Neutrosophic Multisets and their Applications	Dr. K V Thomas	2020
10	DEEPA S NAIR	Full Time	Applied and Algorithmic Graph Theory	Dr. Seethu Varghese	2023





## Progress Presentations

Date	Experts in Progress Presentation	Number of Students Presented
30-07-2022; 06.00 - 08.00 pm	Dr. K.P. Jose, Department of Mathematics, St. Peters College, Kolencherry	7
03-09-2022; 06.00 - 07.00 pm	Dr. K.P. Jose, Department of Mathematics, St. Peters College, Kolencherry	2
11-02-2023; 02.00 - 04.00 pm	Dr. Manju K Menon, Associate Professor, Department of Mathematics, St. Paul's College, Kalamassery.	7
30-03-2023; 07.00 - 08.00 pm	Dr. Manju K Menon, Associate Professor, Department of Mathematics, St. Paul's College, Kalamassery.	2

### Details of Paper presentation/Publication/Participation in Conferences by Research Scholars in 2022-23

#### Ancy Varghese

- Presented the paper titled 'Study of Intuitionistic Fuzzy\*-ideals of a Semi Group' at QUAESITIO 2022-23, a multidisciplinary online International Conference organized by the Research Cell and IQAC of St. Stephen's College, Uzhavoor in association with MG University, Kottayam on 17-12-2022
- Participated in the 5 day Faculty Development Program sponsored by KTU, organized by Department of Basic Science and humanities, SSET, Karukutty, from 22-08-2022 to 26-08-2022
- Published the paper titled 'Study on Intuitionistic Fuzzy Abundant Semigroup' in (Scopus indexed) Turkish Journal of Computer and Mathematics Education, Vol.14 No.02 (2023), 35-46

#### Deepa S

- Presented the paper titled 'A Study on Normalized Complex Fuzzy Sets' at National Conference on Discrete Mathematics and its Applications (NCDMA'22) conducted by Dept. of Mathematics, Velammal College of Engineering & Technology, Madurai on 15-07-2022 & 16-07-2022
- Presented the paper titled 'A Study on Clean Fuzzy Subrings' at National Seminar on

Fuzzy logic, Neural Network & Machine Learning conducted by Department of Mathematics, Al-Ameen College, Edathala, on 15-12-2022 & 16-12-2022

- Presented the paper titled 'Complex Clean Fuzzy Subrings' at International Conference on Recent Development and Techniques in Pure and Applied Mathematics (ICRDT-PAM-2023) organized by Alagappa University, Karaikudi during 23-03-2023 and 24-03-2023.

### **Bincy C J**

- Presented the paper titled 'Coalition number of some special graphs' at International Conference on Algebra & Discrete Mathematics organized by Department of Mathematics, Savitribai Phule Pune University, during 26-05-2022 to 28-05-2022
- Participated in International Workshop on Variants of Graph Domination (IWVGD-2022) conducted by Centre for Post Graduate Studies and Research, Dept. of Mathematics, Bharata Mata College, Thrikkakara, during 17-11-2022 to 19-11-2022
- Presented paper titled 'Failed Power Domination Number of some special Graph Operators' at International Conference on Graphs, Networks and Combinatorics (ICGNC 2023) organized by Department of Mathematics, Ramanujan College, University of Delhi, during 10-01-2023 to 12-01-2023
- Participated in International Conference on Recent Advances in Graph Theory and Allied Areas(ICRAGAA-2023), organized by Department of Mathematics, St.Aloysius College, Elthuruth, Thrissur, sponsored by SERB during 02-02-2023 to 04-02-2023
- Participated in International Conference on the Recent Trends in Applications of Mathematics(ICRTAM-2023), organized by Department of Science and Humanities, FISAT, Angamaly, sponsored by DST-SERB during 23-02-2023 to 25-02-2023.

### **Mariya C Joy**

- Participated in the National Conference on Discrete Mathematics and its Applications (NCDMA'22), conducted by Department of Mathematics, Velammal College of Engineering & Technology, Madurai, during 15-07-2022 & 16-07-2022
- Participated in International Workshop on Variants of Graph Domination (IWVGD-2022) conducted by Centre for Post Graduate Studies and Research, Dept. of Mathematics, Bharata Mata College, Thrikkakara, during 17-11-2022 to 19-11-2022
- Participated in the National Seminar on Fuzzy logic, Neural Network & Machine Learning, conducted by Department of Mathematics, Al-Ameen College, Edathala, during 15-12-2022 & 16-12-2022



- Participated in International Conference on Recent Advances in Graph Theory and Allied Areas(ICRAGAA-2023), organized by Department of Mathematics, St.Aloysius College, Elthuruth, Thrissur, sponsored by SERB during 02-02-2023 to 04-02-2023
- Participated in International Conference on the Recent Trends in Applications of Mathematics(ICRTAM-2023), organized by Department of Science and Humanities, FISAT, Angamaly, sponsored by DST-SERB during 23-02-2023 to 25-02-2023
- Presented the paper titled 'Secure Domination in Fuzzy graphs using Strong Arcs' at International Conference on Recent Development and Techniques in Pure and Applied Mathematics (ICRDTPAM-2023) organized by Alagappa University, Karaikudi, during 23-03-2023 and 24-03-2023.

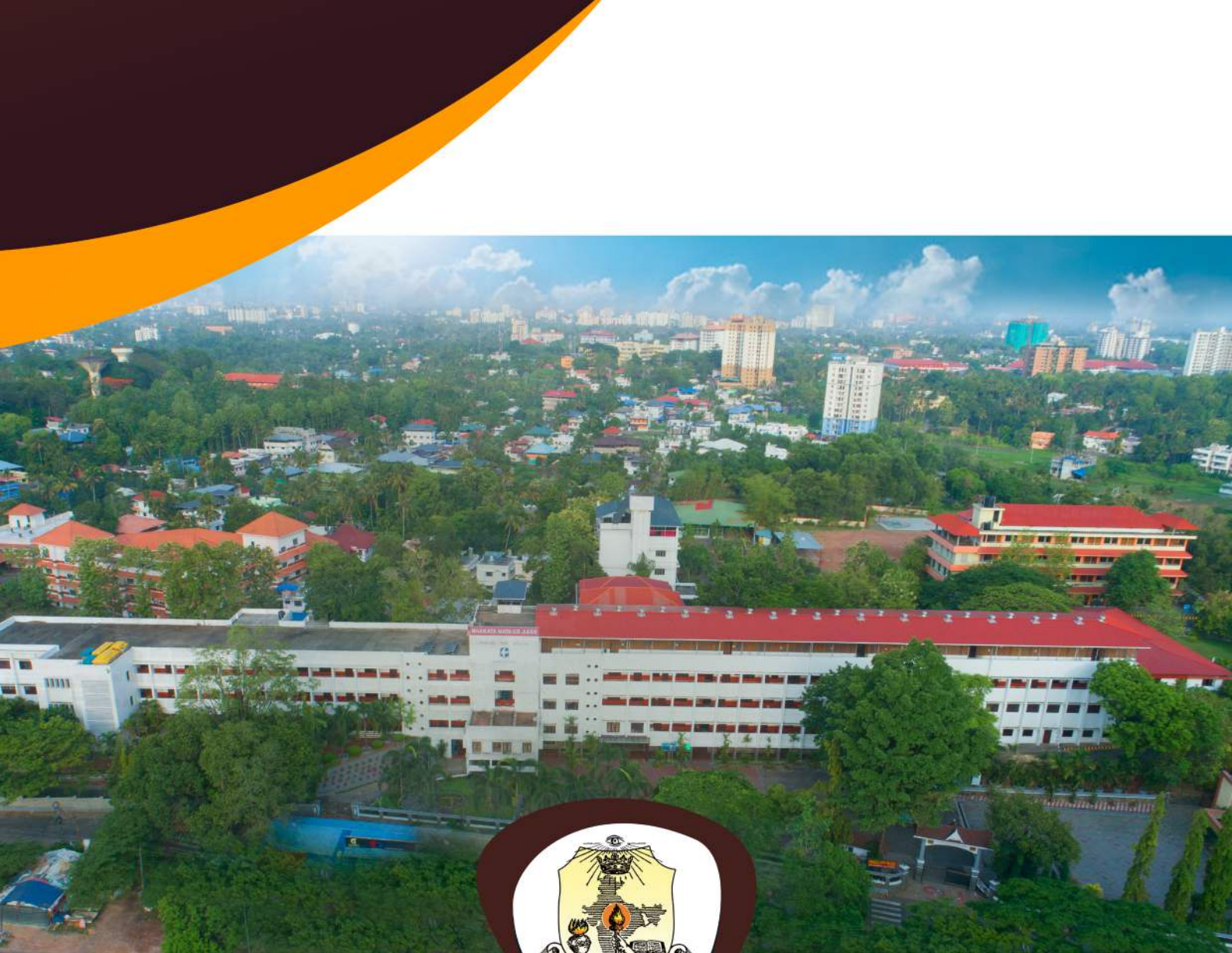
### Deepa S Nair

- Joined on March 13, 2023. Currently doing Ph.D course work
- Participated in 'Philosophical Foundations of Research' organised by the PG Department of Commerce and Research Centre, Bharata Mata College, Thrikkakara, Kochi, Kerala on 12th April 2023
- Participated in 'Effective Review of Literature and Conditional Process Modelling' organised by the PG Department of Commerce and Research Centre, Bharata Mata College, Thrikkakara, Kochi, Kerala on 24th & 25th, April 2023.









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