



M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)



(College affiliated to University of Madras & Re-accredited at "A++" grade by NAAC)

CHENNAI - 600034

B.Sc. MATHEMATICS



Mathematics – The Root & Route to Success



ABOUT THE PROGRAMME

B.Sc. Mathematics programme provides a platform to understand the fundamental concepts of mathematics, develop logical, analytical, heuristic, lateral thinking skills and apply mathematical techniques in various spheres of life. The multidisciplinary and application oriented curriculum caters to students with specific interest in Mathematics, Computer Science, Actuaries, Banking, Finance and Insurance.

Established in 1992, the department has been a part of M.O.P. Vaishnav College for Women from the very inception of the institution. Ever since the department has carved a niche for itself among the science fraternity and the society as a whole.

Our Curriculum has been structured to incorporate programming skills with applications of Mathematics to Banking, Finance, Industry and in daily life.

Math curriculum is supported by:

Mini Projects – An important expedient of self-learning is to convert theoretical knowledge into practical exposure.

Fair and Exhibition – Mathematics is directly relevant to many career paths and the skills developed as part of Mathematics degree are extremely relevant to latest trends.

Practice school – Enables the students to experience the practical applications and implications of mathematics in various spheres of life.

Journal writing – Students are motivated to present research papers in national and international level seminars to develop their research skills.

Our curriculum provides a strong foundation to our students that builds magnificent castles for higher studies in prestigious institutions such as

- **Indian Institute of Technology**
- **Indian Institute of Management**
- **Anna University**
- **Madras University**
- **Ramanujan Institute for Advanced Study in Mathematics**
- **Institute of Financial and Management Research**
- **Indian Statistical Institute, Chennai**
- **Indian School of Economics**

Math enthusiasts have the chance to use their degrees in a variety of ways after graduation, whether it's to help people invest their money for retirement or to solve corporate (IT & Non IT) challenges.

MISSION OF THE PROGRAMME

- To impart comprehensive conceptual understanding and foster practical abilities.
- To inculcate research and journalistic skills.
- To grasp mathematical concepts and strategies quickly, with good retention, and to relate mathematical concepts within and across domain areas and in real-life situations.
- To display mathematical thinking and have a keen awareness on the usage of quantitative information in the world around them.
- To develop critical thinking pedagogy in mathematics and constructivist teaching strategies.
- To create a self-sustained and empowered women.



USP

Our curriculum provides a strong foundation in mathematics and integrates domain-specific knowledge with computational techniques, essential for pursuing higher studies and research.

- **Core courses:**

Linear algebra gives better intuition on how algorithms work under the hood in Machine Learning and enables to make better decisions. Number Theory & Cryptography provides the base for Internet Security and Coding theory.

Mathematical Modelling instills the ability to implement appropriate techniques in varied fields to develop models that predict the effect of environmental changes and contribute to sustainable development.

- **Allied courses:** C Programming and Computer Oriented Numerical Methods- bridge the gap between Academia and the IT Industry.
- **Elective courses:** Programming with Python and Financial Mathematics help students to pursue careers in Actuaries, Banking, Finance and Insurance.

ELIGIBILITY CRITERIA

- Standard XII students from any stream with Mathematics can apply for the program.

COURSES OFFERED BY THE PROGRAMME

CORE AND ALLIED COURSES

- Algebra & Trigonometry
- Differential Calculus
- Integral Calculus
- C Programming
- Computer Oriented Numerical Methods(Theory and Practical using 'C')
- Differential Equations & Applications
- Number Theory & Cryptography
- Mathematical Statistics (Theory and Practical using 'R')
- Mechanics
- Vector Analysis & Co-ordinate Geometry of 3 Dimensions
- Modern Algebra
- Fourier Series & Integral Transforms
- Real Analysis
- Mathematical Modelling
- Linear Algebra
- Optimization Techniques
- Graph Theory
- Complex Analysis

ELECTIVE COURSES

- Programming with Python
- Financial Mathematics
- Discrete Mathematics

INTERDISCIPLINARY ELECTIVE COURSE

- Aptitude and Reasoning

CAREER PROSPECTS

Multi- disciplinary curriculum

Supports graduates to get opportunities in Information technology, Banking, Finance, Machine Learning assisted technologies etc.

Career Options 1.

Combining Mathematics with other subjects such as Economics, Statistics, Computer Science and Engineering sciences can greatly improve job prospects in global market.

M.Sc./Ph.D. in reputed institutes

Our programme help students to pursue higher studies in areas like Mathematics, Statistics, Actuarial Science, Data Science, Banking, Finance, and many more.

Career Options 2.

Market research analyst, Operations research analyst, Graph analyst, Math teacher, Financial planner, Insurance underwriter, Purchasing manager, Data scientist, Statistician, Economist, Actuaries and Financial analyst etc.

National Level Competitive Exams

Our students have successfully qualified competitive exams like IIT JAM, NBHM, CAT and currently pursuing higher studies in IIT's, IIM's, IISER etc.

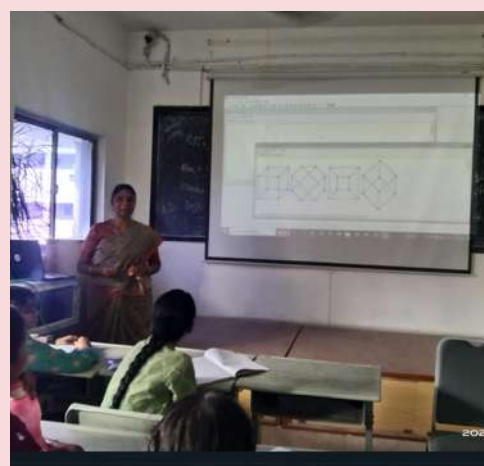
Career Options 3.

Careers in Business, Science, Social services, Research & Education, Public sector undertakings, and specialized technical fields such as system design are also opted by our students.

TEACHING METHODOLOGY

Lecture method is supplemented by

- Class Seminars
- e-Contents
- Brain Storming
- Peer Teaching
- Model Demonstrations
- Brain Teasers
- Quiz
- Case Study
- Audio Visual Aids
- Group Discussions
- Mini projects
- Role Play



INTERNSHIPS

ACADEMICS

- Out of 1500 applicants from all over the country, students from our department have been selected to attend the **Mathematics Training and Talent Search program** continuously for more than a decade.

Academic internships are pursued at

- **IIT- Madras**
- **Chennai Mathematical Institute**

BANKING, FINANCE AND INSURANCE

- Standard Chartered Bank
- Goldman Sachs
- REPCO Bank
- TNSC Bank
- Indian Overseas Bank
- LIC of India
- Ernst & Young

GOVERNMENT/CORPORATE SECTORS

- Chennai Meteorological centre.
- Angarai International Inc, USA
- TVS Logistics
- Wheels India Limited
- Volkswagen

INFORMATION TECHNOLOGY

- HCL
- TCS
- CTS
- DFM Sim Pvt. Ltd.
- WIPRO
- Infosys

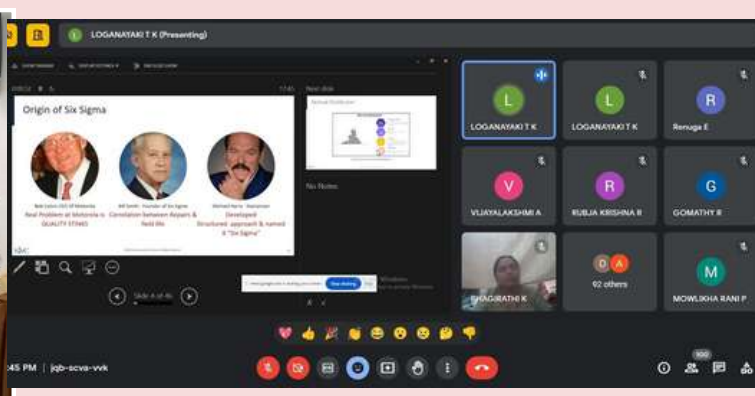
MEDIA

- The Hindu
- Sun TV
- Vijay TV
- Radio Mirchi
- MOP. CRS



π - β Club

- The π - β Club is a platform to scout the inherent talents of students and provides them with an opportunity to develop their latent skills in co-curricular activities. To enhance logical and heuristic skills, Intramural and Intercollegiate competitions with several thought-provoking activities are conducted. Students participate in various intercollegiate competitions and bring back laurels. To enrich the student's intellect- State & National level Conferences, Seminars, and Workshops are organized where eminent academicians and experts from the industry share their expertise.
- **Journal:** Journal article writing facilitates student's effort to establish themselves, develop their technical writing skills, communication skills, and look back on theories, relate, connect, and reflect on what they have learned with the new information and developments in the domain area.



STUDENT ACHIEVEMENTS IN CO-CURRICULAR ACTIVITIES

Overall Trophies Won-16
Number of Prizes Won-218
International Olympiad-1

FIRST PRIZE

87

SECOND PRIZE

94

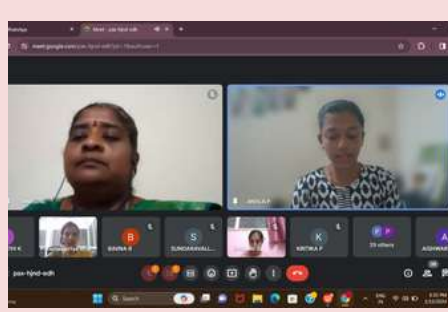
THIRD PRIZE

37



SEMINARS, GUEST LECTURES & WORKSHOPS CONDUCTED

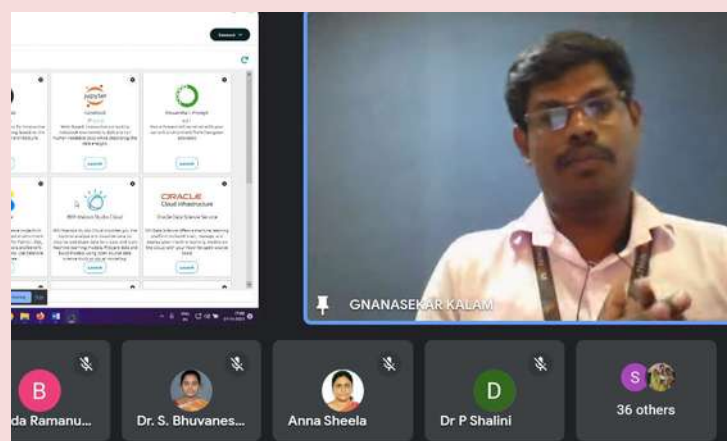
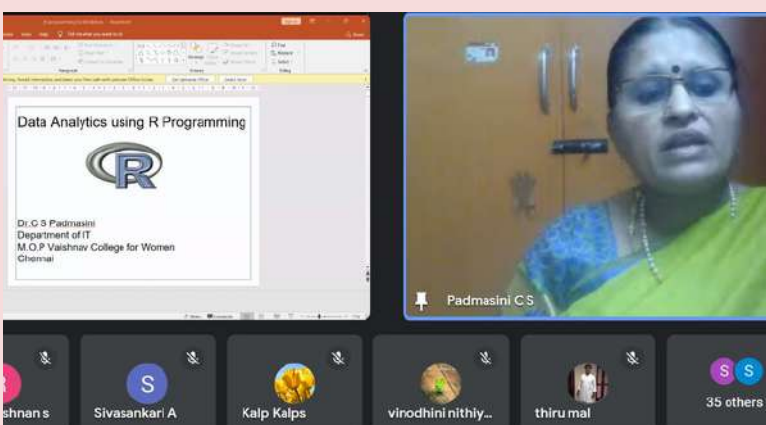
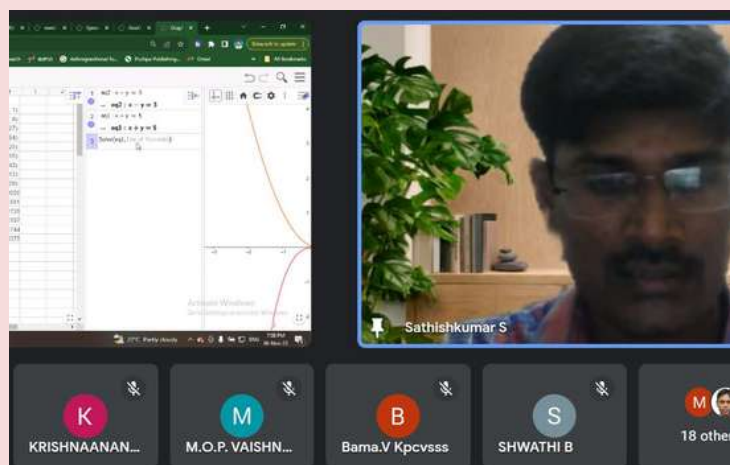
- R Programming
- Recent Research Areas in Graph Theory
- Significance of Mathematics in Machine Learning
- Road to Reach- Importance of IIT JAM/GATE preparation
- Research Ethics
- Actuarial Science - A Numeric and Statistical Career Option
- Vedic Mathematics
- Differential Equations and its Applications
- LaTeX for Technical Writing
- Evolution in Pure and Applied Mathematics
- Calculus and its applications
- Graph Coloring
- Faculty Development Programme on Curriculum Design and Development



FACULTY DEVELOPMENT PROGRAMME



Technical session for school teachers handled by Ms.Sridevi



COMMUNITY SERVICE



2017-2018

No. of beneficiaries: 397

GANITH DAAN

**Enhancing problem
solving skills**



2018-2019

No. of beneficiaries: 404

PAGIR

**Sharing the significance
of mathematics in
diversified fields**



2019-2020

No. of beneficiaries: 456

THOZHIL SEIYALAM

THOZHI



2021-2022

No. of beneficiaries: 223

KHOJ



2022-2023

No. of beneficiaries: 250

VIKAS

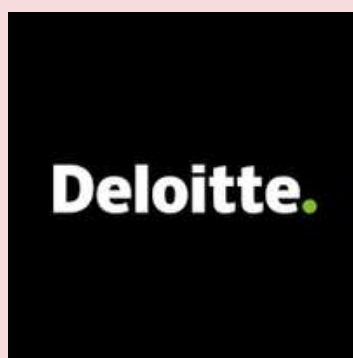
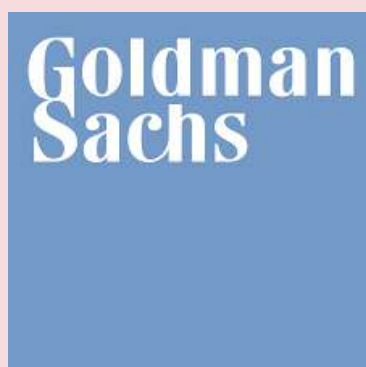


2023-2024

No. of beneficiaries: 129

VIKAS

PROMINENT PLACEMENTS



SUCCESSFUL ENTREPRENEURS



Ms. Ilakkiya Maran
Founder, Artesenia-
The Memory Makers, Chennai.



Ms. Apurva CS
Founder, Anjaneya Fashions,
Chennai.



Ms. Vanipriya J
Director, Product Management,
Full Potential Solutions,
Chennai.



Ms. Divya N
Founder, Bejeweled Befab,
Chennai

PROMINENT ALUMNI

Ms. Sripriya Venkatraman

Director, HCL Technologies Sholinganallur
Chennai

Ms. Srividhya V

National basketball player
Southern Railways

Ms. Amelia Betsy

Assistant Director, Ministry of Health and
Family Welfare, Government of India, New
Delhi.

Ms. Ramya Radhakrishnan

Business Analyst, Syntel, USA

Ms. Ankitha Davey

Assistant Manager,
Bank of New York, Mellon

Ms. Swetha S

Senior Associate, Hey Math, The Hindu,
Chennai

Dr. Arathi P

Assistant Professor, B.S. Abdur Rahman Crescent
Institute of Science and Technology, Chennai

Dr. Poorna Pushkala

Postdoctoral Fellow, International Centre
for Theoretical Sciences, Bengaluru

Ms. Nithya S

Judicial Magistrate, Fast track court,
Karur, Tamil Nadu

"A Mathematics Graduate from M.O.P. is a multifaceted, empowered woman with a humane heart who can excel in diversified fields."

ALUMNI SPEAKS

Vani Priya Jayaraman

**(Entrepreneur), Director - Product Management,
Full Potential Solutions, Chennai**

Whenever I am making new strides in my career, I always remember my institute with gratitude. It gave me a strong foundation of mathematical concepts that come very handy in my corporate life. The soft skill and special skill courses offered in the curriculum has improved my communication skills and face the corporate world with confidence.



Ms. Amelia Betsy

Assistant Director, Ministry of Health and Family Welfare, Government of India, New Delhi.

The studies were not just for career; they were about life where career was a part of it. I learnt a lot with in 3 years at M.O.P., a great learning experience. I came face to face with a lot of good things. And now that I'm out, I miss M.O.P. the most. It's a family that I've left.



Srividhya V

National basketball player, Southern Railways

M.O.P. has been place where I found a unique blend of excellence and commitment. Great faculty, wonderful ambience to learn, and excellent facilities to sports, this is how I describe M.O.P. If I were to describe M.O.P. in one word it would be Excellence with Innovation. I would like to thank Principal mam and Management.



ALUMNI SPEAKS

Akshaya V (2009-2012)

Commercial & Contracts Analyst - Cognizant

M.O.P. enhanced my quantitative skills and provided invaluable experiences. The Legal Contract Management elective and MS Office course were instrumental in my career. Department Professors nurtured us at every step. My involvement in the community radio gave me unique insights and experiences. A guest lecture inspired me to pursue an MBA. M.O.P. prepared me for my career and beyond. I cherish every moment spent there.



Anitha Valliappan (2018-2021)

Pursuing Integrated Ph.D at IISER, Trivandrum

The course offered at M.O.P. provided a diverse range of subjects in pure and applied mathematics, which has been instrumental in paving various career paths for me. Subjects like Discrete Mathematics, Functional Mathematics, and Optimization Techniques were particularly beneficial as they covered a significant portion of competitive exams such as JAM. The strong foundation laid during my BSc has proven invaluable in my current pursuit of an integrated PhD in Mathematics.

Varsha V (2019-2022)

Pursuing Integrated Ph.D at IISER, Bhopal

Courses like Differential Equations, Integral Calculus, Number Theory, Modern Algebra, and Linear Algebra are core at M.O.P. They cover essential topics for undergraduates and greatly aided my entrance exam preparation. The supportive teachers in the mathematics department encourage career-building activities. The department's club fosters creativity through organizing mathematical events, offering a fun and educational platform for students.

