

## ABOUT THE DEPARTMENT

The Department of Mathematics holds a special place in the history of our college. It has a privilege of being the first department to get UG & PG Courses in 1991 and 2013 respectively. The hard work put in by diligent faculty yielded result very fast in making it one of the best department yielding good results in the university examinations. From 1995 the department's initiation to promote computer and mathematics education for all students has made it a result oriented department. Students of our department are given guidance in career opportunities and a good number of them get placed annually in multinational companies. The faculty gives in their best for the welfare of the students and their holistic development.

## FACULTY LIST

1. Gigi George, M.Sc, M.Phil, B.Ed., Ph.D. 9446453860

**H.O.D & Principal-in-Charge** (Associate Professor)

2. Shalitha Jacob, M.Sc.(Statistics), M.Sc.(Mathematics)  
Asst. Professor(Statistics) 9495409095

3. Silvey Paul, M.Sc. 9847289731

Guest Lecturer

4. Ritty Susan Varghese, M.Sc., B.Ed. 9605951555

Guest Lecturer

5. Keerthy Kishore A., M.Sc. 8281966022

Guest Lecturer

6. Emilda Sebastian, M.Sc. Guest Lecturer	9947142835
7. Reshma M.R., M.Sc. Guest Lecturer	9496416970
8. Sini Paul, M.Sc., B.Ed. Guest Lecturer	9562324936

### **RETIRED FACULTY LIST**

1. Dr. Lisy Cherian (Principal)	9447382727
2. Dr. Annie Kurian K.	9446517525

### **COURSES OFFERED**

#### **AIDED STREAM**

1. MSC MATHEMATICS (2 YEARS)

NO OF SEATS: 12

2. BSC MATHEMATICS MODEL I (3 YEARS)

NO OF SEATS: 36

COMPLEMENTARY COURSES: PHYSICS AND STATISTICS

### **PROGRAMME OUTCOME**

1. To equip students with analytic and problem solving skills for careers and graduate works
2. To equip students to face the modern challenges in Mathematics

3. To apply Mathematical knowledge and be able to solve mathematical problems using technology

### PROGRAMME SPECIFIC OUTCOME

The aim of the Programme is to make learning Mathematics a meaningful and enjoyable process rather than acquiring manipulative skills and reducing it to an exercise in using thumb rules. This Course ensures the active involvement of students in learning and enhances their mathematical rigor. Students will acquire a detailed knowledge and deeper insight of the subject there by getting an edge over their pursuit of higher studies. The wide range of concepts included in the syllabi enable students to form the part of applied and professional mathematics. The Objective of the Programme is to provide a holistic and logical framework in almost all areas of Mathematics. The primary purpose of the Programme is to take the mystery out of the subject matter and to explore this field of study in an interesting and innovative manner to utilize the mathematical tools in related areas.

Sl.No	Name of the Paper	Course Outcomes
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1	Foundations of Mathematics	To introduce the concepts of mathematical logic methods and a brief introduction of theory of Equations. These topics are foundations of most areas of modern mathematics.
2	Analytic Geometry , Trigonometry and Differential Calculus	To introduce Conic Sections, Polar Coordinates, Hyperbolic functions, Factorization, Summation of infinite series, Successive differentiation and Indeterminate forms.
3	Calculus	To introduce Taylor series, Curvature, Evolutes, Partial differentiation, Volumes, Surface Area, Revolution, Double and Triple integration.
4	Vector Calculus, Theory of Numbers and Laplace transform	To give detailed study on vector differentiation and Integration, to introduce congruence, Fermat's theorem and Wilson's theorem in theory of numbers and to give basic concepts of Laplace transforms.
5	Mathematical Analysis	To give detailed study on real numbers, limits, sequences and series.
6	Differential Equations	To introduce ordinary differential and Partial differential equations, serial functions and their solutions especially using power series.
7	Abstract Algebra	To give detailed study on Groups, Ring and their Homomorphism
8	Human Right and Mathematics for Environmental Studies	To help the students in acquiring the basic knowledge about environment and to inform the students about the social norms that provide unity with environmental characteristics and create positive attitude about the environment.
9	Open Course-Applicable Mathematics	To prepare the students of all streams to approach competitive examinations and help them to acquire better understanding of concepts and problem solving skill.
10	Real Analysis	To introduce sequence and series of functions, continuous functions and Riemann Integral.
11	Graph Theory and Metric Spaces	To introduce basic definitions of graph theory and metric spaces.
12	Complex Analysis	Explanation of analytic functions, complex functions, complex integration, power series and their properties.
13	Linear Algebra	To get detailed study on matrix algebra, vector spaces, Linear transformations and characteristics equations.
14	Choice Based Numerical Analysis	To introduce differentiation, integration, interpolation, solutions of equations, Fourier series & transform using numerical methods.
15	Project	To promote independent study and research in new areas.

## B.SC PROGRAMME OUTCOME

## M Sc. PROGRAMME OUTCOME

Sl.No	Name of the Paper	Course Outcomes
1	Abstract Algebra	To give detailed study on Groups, Rings, Field, Ideals and Integral domain.
2	Linear Algebra	To give detailed study on Vector spaces, Linear transformations, invariant subspaces and essential facts about determinants of square matrices.
3	Basic Topology	To introduce Topological spaces and study its various properties.
4	Real Analysis	To give a detailed study on functions of bounded variations and rectifiable curves, Reimann Stiltjes integral, Sequence and series of functions, and Weierstrass approximation theorem & some Special functions.
5	Graph Theory	To introduce basic concepts of Graph, Tree, Eulerian & Hamiltonian graphs and its applications, Graph coloring, Planar graph, and Spectral properties of graph.
6	Advanced Abstract Algebra	To introduce Extension Fields, Euclidean Domains, Separable Extension and Automorphism of Fields.
7	Advanced Topology	To introduce Compact spaces, Products & Co-products spaces, Embedding & Metrisation and Nets & Filters.
8	Numerical analysis with Python3	To introduce basic concepts of Python 3 software language and programme for numerical analysis using Python 3 software language.
9	Complex Analysis	To introduce spherical representation of complex numbers, power series, complex integration, and higher derivative of complex variable, analytic functions & singularities.
10	Measure Theory and Integration	To give a detailed study on Lebesgue measure, Lebesgue measurable functions & integration, General Measure space and measurable functions and integration over General Measure Space and Product Measures.

11	Advanced Complex Analysis	To give a detailed study on Harmonic functions, Power Series Expansions and the Riemann Zeta function.	
12	Partial Differential Equations	To give a detailed study on Laplace equation and various methods for finding solutions of partial differential equations.	
13	Multivariate Calculus and Integral Transforms	To give a detailed study on Fourier series & Fourier transform, Multivariable differential calculus, Integration of differential forms.	
14	Functional Analysis	To give a detailed study on Linear functional & Inner product space.	
15	Optimization Techniques	To give a detailed study on Linear programming, Integer programming, Goal programming and Non-linear programming	
16	Spectral Theory	To give a detailed study on Reflexive spaces, Spectral theory, Banach Algebras and Self Adjoint Linear Operators.	

17	A n a l y t i c N u m b e r T h e o r y	To give a study of Number theory on Analytical perspective.
18	D i f f e	To give a detailed study on Linear Algebra, Vector Calculus and Differential

	r e n t i a l G e o m e t r y	Equations in higher dimensional space
19	A l g o r i t h m i c G r a p h T h e o r y	To give study on Graph theoretic algorithms and samples of algorithms for solving problems on Graphs.
20	C o m b i n a t o r	To give a detailed study on Permutation & Combinations, Generating functions & Recurrence relation and the Principle of Inclusion and Exclusion.

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21	P r o b a b i l i t y T h e o r y	To give a detailed study on Probability, Random variables, Sequence of Random variables and their convergence.

### DEPARTMENT ACTIVITIES

1. The Department conducts 'NET Coaching' for PG students on all Wednesdays from 3.30 pm to 4.30 pm in which 10 of our students are attending.
2. Mathematics Association LEHENDS 2K19 was inaugurated on 02 August 2019. Dr. Sandhya E, Associate Professor Department of Statistics Prajyoti Niketan College, Puthukad, delivered a talk on "Some Application of Matrices in Probability and Statistics".
3. The Department conducts Association Meetings on all Wednesdays at 1.00 pm in which students of each of the classes conduct activities based on topics in Mathematics.
4. The Department conducted an Interdepartmental Maths Quiz Competition, MATH RUN. Most of the Departments actively participated in it and students of Physics Department won the first prize.
5. The students and staff of the department actively participated in the flood relief collection drive initiated by the college and also donated relief items for the purpose.

### STUDENTS ACTIVITIES



1. Rajalakshmi Anil ,Anjala Fathima and Lijily J Panicker of first PG students attended a National Seminar on Pure and Applied Mathematics, NSPAM 2019 on 04 & 05 of July 2019 at St. Peters College Kolenchery ,sponsored by KSCSTE and DST.
2. Ms. Ramseena P.A., Ms. Inarani and Ms. Anjali Valsan of III Dc Mathematics, attended the 'NATIONAL SEMINAR MSA 2019' conducted by Dept. of Mathematics, St. Xaviers College, Aluva on 10/07/2019.
3. Students of II and III BS.c Mathematics applied for the College Students Project under Scheme for Young Tanlents in science SPYTiS-II provided by KSCSTE on July 2019.
4. Ms. AhilaHari and Ashitha Kareem won IInd prize in the treasure hunt conducted by NCC

### **FACILITIES**

1. Our Department provides Computer Lab facilities for our students
2. Provides Library facilities with good number of Journals and Periodicals
3. Provides facility to take Xerox copy to students
4. Provides LCD Projector, Priner, White board
5. Provides free internet access to its faculty and its students