SCHOOL OF MATHEMATICS & STATISTICS

MAHATMA GANDHI UNIVERSITY KOTTAYAM, KERALA

Prof.(Dr).Sabu Thomas
Hon. Vice Chancellor
Mahatma Gandhi
University
Kottayam

Prof. (Dr.) C.T. Aravindakumar
Pro Vice Chancellor
Mahatma Gandhi University
Kottayam

Prof. (Dr.)
Prakashkumar B
Registrar
Mahatma Gandhi
University
Kottayam

ABOUT UNIVERSITY

Established on 2 nd October 1983 in the name of the Father of our nation, Mahatma Gandhi, by the Government of Kerala as a State University, Mahatma Gandhi University Kottayam has grown to the position of the Best University in Kerala bagging the Chancellor's Award three times during 2016, 2018 and 2020. It was reaccredited by NAAC in 2017 with A Grade and Score 3.24 out of 4.00. We have been included in Times Higher Education world universities ranking 2022 in the band 400-500. In the NIRF ranking we are 30th at National Level and in the Atal Ranking 2022 for Innovation and Achievements, we are 3rd at National Level. The CSIR has rated us with 13 th rank for intellectual productivity and NISTADS has ranked it 19th at National Level in terms of h-index for scientific publications. At present the University has 17 Schools offering postgraduate and research programs in Arts and Humanities, Science and Technology, Social Science, Commerce and Management Science disciplines. The University welcomes students irrespective of caste, creed and nationality and has an inclusive policy.

VISION

"To create, disseminate and translate knowledge in Mathematics, Statistics and allied disciplines that will best serve the society."

MISSION

**"To pursue excellence in learning, research and innovation by
Enabling a creative and dynamic teaching environment,
Cultivating an attitude & ability to apply mathematical and statistical skills,
Developing sustainable research solutions for the benefit of the nation,
Building bridges between academia, industry and society,
Fostering an evolving entrepreneurial spirit and specific technological skills,
Enhancing mathematical and statistical literacy among the public,
Nurturing leadership qualities with a sense of commitment and accountability,
Inculcating values and ethics in thought, expression and deed."**

DIRECTOR'S SPACE

Prof (Dr) K. K. Jose, MSc., PhD, FISI, FRSS, FISPS, FISMS.

The Hon. Director, School of Mathematics & Statistics and School of Data Analytics at Mahatma Gandhi University, Kottayam.

Dr. Jose is an eminent academician who had rendered more than 40 years of meritorious service as a Principal of repute, Professor & Head of the Department, teacher, researcher and organizer. He is the one who is able to guide the students in right direction to achieve their goals and ambition. He has successfully guided more than 25 research scholars for Ph. D., published more than 150 research papers and 6 research level books.

ABOUT SCHOOL

The School of Mathematics and Statistics within the University Main Campus is a dynamic academic department dedicated to the study and advancement of mathematical principles, statistical methods, and their applications. This school plays a crucial role in fostering a deep understanding of mathematical concepts and analytical techniques among students, preparing them for a wide range of careers and further academic pursuits. In addition to academic programs, the School of Mathematics and Statistics may organize seminars, workshops, and conferences to facilitate discussions on current trends, challenges, and breakthroughs in mathematics and statistics. These events provide students and faculty with opportunities to interact with leading experts, fostering a vibrant intellectual community within the school.

PROGRAMS OFFERED

1. M. Sc. Mathematics
2. M. Sc. Statistics
3. Research Leading to Ph. D.

Admission Criteria:

Admission will be solely on the basis of a rank list prepared as per the score obtained in the Common Admission Test.

Test Syllabus: Graduate level Mathematics (25%), Statistics (25%), Logical reasoning, General Mental Ability, Numerical Ability (25%).

Number of seats:20+, 4(International), 4 (National Outside Kerala), 1 (Sports/ Cultural Quota)
Statutory Reservations Allowed.

ELIGIBILITY:

BSc Degree (Core subject as Mathematics/Statistics) with 55% marks Admission through Common Admission Test (CAT) in May / June

STUDENTS CORNER

School of Mathematics & Statistics is guiding through a career developing program. In the current competitive world students need to come up with their skills, which makes the course more interactive and meaningful. Students will be qualified with deep knowledge in their subjects

PLANNING & DEVELOPMENT

The way of journey becomes smoother with a proper guidance. The eminent faculties are there to guide the students through the right path. Molding the students within the quality of the subject can ensure the students career.

FACULTY

Prof.(Dr) K K Jose
Hon. Director (SMS)

Prof.(Dr). R. Sreekumar
Cordinator of SMS

Administrative Staff

Mr. T. S. Rajesh
(A.O.)

Mr. Nirmal George
(A.A.)

Ms Ammu Raju

Dr Sayooj Aby Jose
IMU Breakout Fellow,
Academic Ambassador (SMS)

Faculty of Mathematics

Dr. Merin Jose

Ms. Fathima Kalam Madathil

Ms. Parvathy Krisna A

Ms. Vasanthy V

Ms. Athira Valsan

Ms. Sheen E M

Mr. Vishnu V V

Visiting Faculty:

Prof. Abraham K Samuel

Prof. Dr. A. Vijayakumar

Dr. S. Vivek

Ms. Shafna M Sali

Ms. Sarga Varghese

Mr. Sayooj Aby Jose

Ms. Mariya Thomas

Ms. Anandika Rajeev

Faculty of Statistics

Dr. Satheesh S

Dr. Ancy Joseph

Dr. Ajitha Sasi

Ms. Beteena Kurian

Mr. Muhammad Rais

Ms. Lakshmi Rajeev

PROGRAM STRUCTURE

The post graduate course is held in 4 semesters with 14 core courses & 5 elective courses, and an open course offered from another school. Students have to undergo one full semester project work and internship as part their curriculum in reputed national / international level research institutes / universities / industries etc. giving wide exposure for research and on the job training.

CORE COURSES OF MATHEMATICS

- Linear Algebra
- Algebra- I , II
- Topology
- Real Analysis – I , II
- Discrete Mathematics
- Ordinary Differential Equation
- Complex Analysis
- Functional Analysis
- Multivariable Calculus & Geometry
- Analytic Number Theory
- Probability Theory

ELECTIVE COURSES FOR MATHEMATICS

- Partial Differential Equation
- Differential Geometry
- Algebraic Topology
- Advanced Functional Analysis
- Advanced Complex Analysis
- Coding Theory
- Algebraic Number Theory
- Wavelets
- Graphs & Matrices
- Representation Theory
- Linear Programming
- Cryptography
- Operations Research
- Data Science & Data Analytics
- Stochastic Process
- Mathematics for Genetics and Ecology
- Acturial Mathematics
- Numerical Analysis with Python

Open Course: Python for Machine   Learning

CORE COURSES OF STATISTICS

- **Mathematical Tools for Statistics**
- **Probability Theory I ,II**
- **Statistical Distribution Theory**
- **Statistical Estimation Theory**
- **Sampling Techniques**
- **Statistical Computing I Practical(using R)**
- **Testing of Hypotheses**
- **Design of Experiments**
- **Statistical Computing II Practical**
- **Multivariate Statistical Analysis**
- **Stochastic Processes Modeling**
- **Advanced Statistical Computing**

ELECTIVE COURSES OF STATISTICS

- **Applied Regression Analysis**
- **Bayesian Inference and Computing**
- **Data Science & Big Data Analytics**
- **Data Mining Techniques**
- **Machine Learning & Predictive Modeling**
- **Advanced Resampling Techniques**
- **Time Series Analysis &Forecasting**
- **Bioinformatics and Computational Biology**
- **Survival Analysis**
- **Biostatistics & Epidemiology**
- **Demography & Population Dynamics**
- **Categorical & Directional Data Analysis**
- **Clinical Trials and Bioassays**
- **Statistical Genetics and Ecology**
- **Statistical Methods for Micro-Array Analysis**
- **Operations Research**
- **Industrial Statistics & Quality Control**
- **Actuarial Statistics**
- **Econometric Methods**
- **Stochastic Finance**
- **Reliability Modeling and Analysis**

INTERACTIVE SESSIONS

Asking doubts helps the tutor assess your level of understanding of a concept while it clarifies the concept for you. This habit of asking good questions and doubts helps you to develop the interpersonal skills.

TEACHING CORNER

Eminent teachers can mould and inspire students with a thirst for knowledge and make classrooms live with innovation and creativity to strengthen career opportunities and entrepreneurship.

SELF DEVELOPMENT

Students have the space to
develop their own skill through
presentations, seminars, group
discussions. Effective communication
skills are a valuable life skill,
which will help you in your further
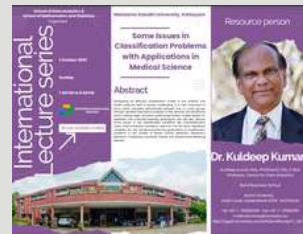education and in your future careers.

WORKSHOPS

- **Workshop on Statistical methods & R Programming, December 2021**
- **Orientation Programme in Mathematical Sciences, December 2021**
- **International Conference on Mathematics, Statistics & Data Science, February 2022**
- **Seminar on Recent Developments in Official Statistics & National Statistical System in India, August 2022**
- **Analytics & Data Summit, August 2022**
- **National Mathematics Day Celebration, December 2022**
- **International Workshop on Differential Equation & Applications, January 2023**

WORKSHOPS

- **National Science Day Celebration & International Lecture Series, March 2023**
- **One Day Workshop on Data Science & Data Analytics, March 2023**
- **Workshop on High Dimentional Data & AI/ML Algorithms with Applications, Savitribai Phule Pune University, March 2023**
- **Workshop on Machine Learning Algorithms & Their Applications, CUSAT & Wells Fargo Bank, March 2023**
- **The Workshop on Data Analytics and Machine Learning for Clinical Research**
- **International Lectures on Classification Problems with Applications in Medical Science by Dr. Kuldeep Kumar, Centre for Data Analytics, Bond University, Australia**

INTERNATIONAL COLLABORATIONS & LINKAGES

- **Al. I. Cuza University of Iasi, Romania**
- **Technical University Gheorghe, Asachi of Iasi, Romania**
- **Phuketh Rajabhat University, Thailand**

INTERNATIONAL COLLABORATIONS & LINKAGES

We have International students from other countries. International student Mr Ekisa Collins Etyang from Keniya(2021-23) and Mr. Byron Mungaulshepai(2023-25) in MSc. Statistics under ICCR Scholarship of Govt. of India for International Students

International Project Fellowship with Dr. Sayooj Aby Jose, Our Academic Ambassador

ISMS Conference

The School of Mathematics and Statistics hosted the 41 th Annual Conference of the Indian Society of Medical Statistics during 1-4 November 2023

ACTIVITIES

SOCIAL SERVICES & CAMPUS CLEANING

Maintaining a vibrant and healthy campus environment involves a dual commitment to social service and cleanliness. Through active community engagement, student-led initiatives, and collaborative partnerships, the campus community can make a positive impact beyond its borders.

CULTURAL PROGRAMMES & CELEBRATIONS

Cultural programs and celebrations play a crucial role in fostering a vibrant and inclusive campus community. These events provide opportunities for students, faculty, and staff to come together, celebrate diversity, and enrich their educational experience.

Prof.(Dr) K K Jose
Hon. Director (SMS)

<u>BATCHES</u>
<u>2021-23</u>

MSc Statistics   **MSc Mathematics**

"Better Statistics, Better Lives. Statistics is the new technology for development and planning, innovation and decision making using data."

"Mathematics is the Queen of all sciences. It's the base of all logic and research."

SCHOOL
OF
MATHEMATICS &
STATISTICS

School of Mathematics and Statistics, Near Raveendra Sarovar, M. G. University Main Campus, Priyadarshini Hills P. O.Kottayam -686560
Email: sms@mgu.ac.in