## Introduction

The department of Mathematics welcomes you to a conducive and inspiring learning environment .It is one of eight departments in the School of Pure and Applied Sciences at Kenyatta University. Established in 1972, the Department has been at the apex of capacity development in Mathematics in Kenya. Graduates of the department form the bulk of Mathematics teachers in Secondary Schools and Tertiary institutions in the country. In addition, many of our graduates are employed in research institutes, industries and banks.

The Department offers courses leading to two areas of specialization, namely Pure Mathematics and Applied Mathematics. We also offers service courses for other Departments in the university.

## Our Vision

The vision of the Department is to be a center of excellence in teaching, research and service to community in Mathematics.

## Our Mission

The mission of the Department is to teach and advance the state of the art knowledge in pure and applied Mathematics.

## Objectives

The objectives of the Department are to:
1. Provide opportunities for students to develop competence in Mathematics.
2. Offer Mathematics services to students in the schools of Pure and Applied Sciences, Education, Engineering, Economics and Humanities and Social Sciences.
3. Prepare students to pursue postgraduate studies and careers in teaching, government and industry.
4. Provide students with a course of study directed towards an understanding of mathematical theory and its relation to other fields of study.
5. Provide opportunities for teaching staff to offer seminars and research findings.
6. Establish linkages with schools and industry to promote effective teaching of mathematics.
7. To equip students with computational skills

## Programmes and Duration

The Department offers courses at both undergraduates and postgraduates levels.

## Undergraduate Programmes

The undergraduate programmes take 4 years.
In the first year of study, a student registers for courses in at least two (2) departments. As a subject, Mathematics can be combined with a number of other subjects under one of the following categories: Minor, Regular or Major.
Students in Mathematics take courses leading to any of the following degree courses:

(i) Bachelor of Science
(ii) Bachelor of Education (Science)
(iii) Bachelor of Education (Art)
(iv) Bachelor of Arts (BA)
(v) Bachelor of Science ( Mathematics and Computer Science)
(vi) Bachelor of Science (Statistics and Programming)
(vii) Bachelor of Science (Actuarial Science)

Students wishing to take Mathematics will be required to study four core units in the Department in their first year of study. One of the following structures applies those in B.Sc., from the $3^{rd}$ semester to the $8^{th}$ semester:

(i) 3:3:2:2
(ii) 3:3:2:1
(iii) 3:2:1:1

The numbers represent the departments a student can belong to in the $1^{st}$, $2^{nd}$ $3^{rd}$ and $4^{th}$ year of study.
There are three areas of specialization in Mathematics namely Pure Mathematics and Applied Mathematics. Those who wish to specialize in any of the areas should be a major in that area.

## Postgraduate Programmes

The programmes take at least two academic years and include coursework, examination and thesis/project.

## 1. M.Sc. Programme

Depending on the area students majored in at undergraduate level, a student can opt for any of the following programmes at the Msc level:

- Msc in Pure Mathematics
- Msc in Applied Mathematics

## Mode of Delivery

The Bachelors and Masters programmes fall under one of the following modes:
- Full-Time
- Distance (Open) learning
- IBP (for teachers and instructors – during school holidays)

## Career Prospects of the programme

Banks and Insurance companies require people with strong mathematical background. Several of Mathematics graduates have been absorbed by banks as Management Trainee and by Insurance companies as Actuarial trainees. There is still a great demand for Mathematics teachers in secondary and post secondary institutions and statistician research institution & industries.

## Specific Entry Requirements

All students admitted to the university are eligible to study mathematics at undergraduate level provided they meet the minimum requirements for the Department. To take mathematics in the Bachelors degree, a student must have attained at least a grade B- in Mathematics in the KCSE Examination. To be admitted to the Bsc. (Mathematics and Computer Sciecnce) a student must have a B in Mathematics and C+ in English.

To be admitted for an Msc course in Mathematics, a student must have attained at least an upper second-class at Bachelor's degree or equivalent from a university recognized by the Senate. Students with a lower second-class degree with at least two years relevant experience may be admitted for the Msc course. In addition a student must have done and passed all the core units in the area he/she intends to study.

To be admitted for the Ph.D course in Mathematics, a student must have a M. Sc. in Mathematics from a university recognized by the Senate.

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## Future programmes
The Department is in the process of rolling out new degree programmes, namely
- B.Sc. (Financial mathematics)
- B.Sc (Industrial mathematics)
- B.Sc (BioMathematics)
- M.sc. (Information Theory, Coding Theory and Cryptography)

## Academic Staff & Area of Specialization
The departmental academic staff consists of the following:-

### Pure Mathematics
1. Prof. Ireri Kamuti        -**Group Theory**
2. Dr.  Bernard Kivunge    **-Loop theory**
3. Dr.  Lydia Njuguna      -**Loop theory**
4. Dr.  Jane Rimberia      -**Group Theory**
5. Dr.  Fidelis Magero      -**Group Theory**
6. Dr.  Moses Kangogo     **-Group Theory**
7. Dr.  Mutie Kavila        -**Operator Theory**
8. Mr.  Fredrick Olum       **-Group Theory**

### Applied mathematics
9. Prof. S.P. Singh        -**Differential Geometry**
10. Prof. James Gatoto    **-Differential Geometry**
11. Prof. David Malonza   -**Operator Theory, Dynamical Systems**
12. Dr. G. X. Stower       -**Fluid mechanics**
13. Dr. Isaac Chepkwony -**Control Theory**
14. Dr. Kennedy Awuor  -**Turbulent modelling**
15. Dr. Winifred Mutuku –**Fluid mechanics**
16. Dr. Amos Magua       **-Fluid dynamics**
17. Dr. Ambrose Wahome-**Fluid mechanics**
18. Dr.Lawrence Njau       Algebraic Computation
19. Ms. Mary Opondo        - **Differential Geometry**

## COLLABORATION AND NETWORKING
Over the years, the Department has established research Collaboration with the following institutions:
-Iowa State University, Department of Mathematics, USA
-University of Rome "La Sapienza", Department of Mathematics, ITALY.

### Correspondence

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**Department of Mathematics**
**Information Brochure**



*Committed to Creativity, Excellence & Self-reliance*