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.

## Future programmes
The Department is in the process of rolling out five new degree programmes, namely
- B.Sc. (Financial mathematics)
- B.Sc (Mathematics & Computer science)
- B.Sc (Industrial mathematics)

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

**Pure Mathematics**
Prof. J. Mutio – **Group Theory**
Dr. I. Kamuti – **Group Theory**
Dr. D. M. Malonza – **Operator theory**
Mrs. L. Njuguna – **Number theory**
Dr. J. K. Rimberia – **Group Theory**
Mr. Fidelis Magero **– Group Theory**
Mr. Moses Kangogo **– Group Theory**
Mr. Amos N. Magua **– Group Theory**
Mr. Mutie Kavila – Operator Theory

**Applied mathematics**
Prof. S.P. Singh – **Differential Geometry**
Dr. G. X. Stower – **Fluid mechanics**
Dr. F. K. Gatheri – **Numerical Analysis**
Dr. D.M. Malonza – **Dynamical Systems**
Dr. I. Chepkwony **– Control Theory**
Ms. M.A. Opondo – **Mathematical Modeling**
Mr. K.O. Awuor – **Mathematical Modeling**
Ms. Winnie Mutuku **– Applied Mathematics**
Mr. Ambrose Wahome - **Applied Mathematics**
Laurence Kariuki Njau    - **Applied Mathematics**

**Statistics**
Dr. L.O.Odongo – **Non-Parametric Methods**
Dr. E.G. Njenga – **Sample Surveys**
Dr.J.M. Kahiri – **Sample Surveys**
Dr. T. K. Kibua- **Non-Parametric** (**Smoothing)**
Dr. Christopher Ouma - **Statistics**
Mr.A.K. Ruto – **Stochastic Processes**
Mr. B.N. Ngigi- **Sample Surveys**
Mrs. E.W. Muchai – **Sample Surveys**
Mr. Ananda Kube – **Statistics**

## 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

**For further details please contact:**
The Chairman,
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Fax: (020) 8711575
Email: ku-mathematics@ku.ac.ke

# KENYATTA UNIVERSITY

# MATHEMATICS DEPARTMENT
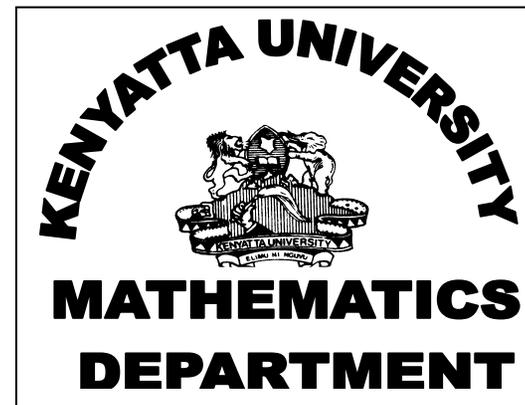
**P.O. BOX 43844-00100
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Email: ku-mathematics@ku.ac-ke**

**2011-2013
Mathematics
Undergraduate Degree programme
Information Brochure**
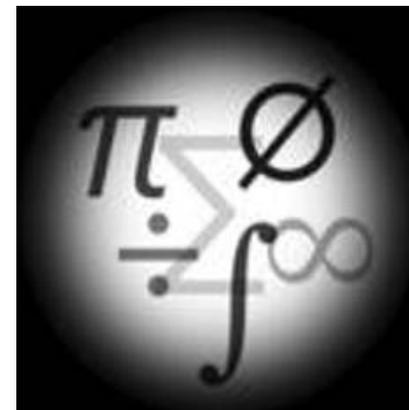
*Committed to Creativity, Excellence & Self-reliance*

## Introduction

The department of Mathematics welcomes you to a conducive and inspiring learning environment The Department is one of six 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 and Statistics in Kenya. Graduates of the department form the bulk of Mathematics teachers in Secondary Schools and Tertiary institutions in the country. Besides, many of our graduates are employed in research institutes, industries and banks.

The Department offers courses leading to five areas of specialization; Pure Mathematics, Applied Mathematics, Statistics, Social Statistics and Biostatistics. In addition, the Department 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 and Statistics.

## Our Mission

The mission of the Department is to teach and advance the state of the art knowledge in Pure Mathematics, Applied Mathematics and Statistics.

## Objectives

The objectives of the Department are to:
1. Provide opportunities for students to develop competence in Mathematics.
2. Offer mathematics services to engineering, business, economics and social science departments.
3. Prepare students to pursue postgraduate studies and careers in teaching, government and industry.
4. Provide the 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 skill

## Programmes and Duration

The Department offers courses at both undergraduates and postgraduates levels.

### Undergraduate Programmes

The undergraduate programmes take 3-4 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 (General)
(ii) Bachelor of Education (Science)
(iii) Bachelor of Education (Art)
(iv) Bachelor of Arts (BA)
(v) B.Sc (Statistics & Programming)

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

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

There are three areas of specialization in mathematics: Pure, Applied and Statistics. Those who wish to specialize in any of our areas should be a major in mathematics. Core units in the respective areas of specialization are:

**PURE:** SMA: 301, 302, 305, 400, 401, 404, 403, 406, 407
**APPLIED:** SMA: 305, 330, 334, 335, 336, 404, 430, 432, 433
**STATSTICS:** SMA: 361, 363, 365, 463, 464, 466, 467
For more details consult the Department.

### Postgraduate Programmes

The programme takes at least two academic years and includes coursework, examination and thesis or 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 Statistics
- Msc in Applied Mathematics
- Msc in Biostatistics
- Msc in Social Statistics

## 2. Ph.D. Programme

The degree of PhD is attained by original research work and the submission of thesis under the guidance of supervisors from the department through the Graduate school. A candidate registering for PhD degree should apply after consulting the supervisors in the Department under whom he/she wishes to work.

## 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, research institution & industries.

## Specific Entry Requirements

All students who have been 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 for an Msc course in Mathematics, a student must have attained at least an upper second-class Bachelor's degree 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 into the PhD programme, a student must have a M.Sc. in Mathematics form a university recognized by the senate.