MASTER OF SCIENCE IN MATHEMATICAL FINANCE & RISK ANALYTICS



### Strathmore University

Institute of Mathematical Sciences

### **PROGRAM DETAILS**

The pace of change in the financial sector has never been faster than it is today. Rapid innovation and interdependency in the field of investment, risk management and financial product development has necessitated the need for individuals with adept quantitative skills and an advanced understanding of the theoretical concepts underlying financial markets today.

The Master of Science in Mathematical Finance and Risk Analytics offered at the Institute of Mathematical Sciences, Strathmore University provides a deep interaction and contribution from fields such as Finance, Statistics, Computing and Applied Mathematics. The program provides the fundamental training for a successful graduate who is in or seeking a career in analytical industry practice or related academic research in finance and risk.

## "

#### **STUDENT TESTIMONIAL**

"I feel the program is extremely rewarding to those with an interest in developing an in-depth understanding of finance. By focusing on practical applications, the program sets a good foundation for independent research into emerging trends. While the subject matter of the program is finance, the analytical approaches applied have extensive applications, particularly in contexts that require innovative approaches to problem solving. Students are encouraged to pursue creative applications of mathematical tools in doing their research theses, which provides a good foundation for advanced graduate studies."

#### Mr. Kigen Chelimo,

Investment Analyst





### CAREERS

The program will prepare students for analytical roles in the finance industry and academic research roles, including but not limited to: Investment Banking, Quantitative Risk Management and Securities Trading. In Kenya, graduates with an MSc Mathematical Finance can work as analysts in Investment Banks, Insurance, Banking, Regulators such as the Capital Markets Authority, Insurance Regulatory Authority, Kenya Revenue Authority, Nairobi Stock Exchange, which require quantitative analysts in finance, pricing and risk management.

### **MODE OF STUDY**

Evening Program: 5:30 pm - 8:30 pm on weekdays Duration: 2 years Intake: May and September Course Fees: Approximately Kshs 650,000

#### **PROGRAM STRUCTURE**

The course covers 16 course units offered over 4 academic semesters and a subsequent dissertation project. The program relies on MATLAB, Python, R, C++ as the computing languages for modelling. Some of the core modules include:

- Financial Markets and Instruments
- Discrete Time Finance Methods
- Statistical Models and Methods in Financial Markets
- Stochastic Calculus & Continuous Time Finance
- Asset Pricing & Portfolio Optimization
- Seminar Series in Finance
- · Computational Methods in Finance
- Machine Learning with Applications in Finance

# PROGRAM BENEFITS AND OUTCOMES

By the end of the program, the student should be able to:

- i. Apply their knowledge and training in finance, with applied mathematics, statistics and probability theory, to industrial and academic settings such as: asset pricing, risk management, mathematical modelling and statistical data analysis
- ii. The program provides substantial knowledge needed for a successful career in quantitative finance
- iii. It is structured to expose students to both practical and theoretical aspects of study. Such sophisticated skills are in high demand, in both frontier and developed markets globally, especially with the increasingly complex financial markets and evolving environment
- iv. Working from alternative theoretical frameworks, the program provides applications of tools developed to different asset classes, including fixed income and derivatives
- v. Provide the student with appropriate quantitative training to carry out doctoral studies at any leading institution worldwide

### ENTRY REQUIREMENTS

- a) The following are eligible for admission into the MSc. Mathematical Finance:
- Holders of First Class or Upper Second-Class Honours degrees, from recognized universities, in Mathematics or Statistics or Mathematical Finance, or Financial Engineering or a related discipline; OR
- Holders of Lower Second Class degrees in Mathematics or Statistics or Mathematical Finance, or Financial Engineering plus Postgraduate Diplomas in relevant areas; OR
- Holders of Lower Second Class Degrees in Mathematics or Statistics or Mathematical Finance, or Financial Engineering plus a minimum of two years of working experience OR
- b) In addition to meeting the above criteria, the applicants will be required to attend and pass an oral interview and a Graduate Entrance Examination (GEE).
- c) They will also be required to present two reference letters from academic referees.

### **HOW TO APPLY**

In case you are interested kindly subscribe to the program by filling in your contact details and relevant information on our website at http://sims.strathmore.edu/ or email us at sims@strathmore.edu and we will contact you with more information on how you can enrol for this course.



### **INTERVIEW REQUIREMENTS**

All applicants must meet the entry requirements for the respective graduate program they wish to apply for. This is verified by the School of Graduate Studies.

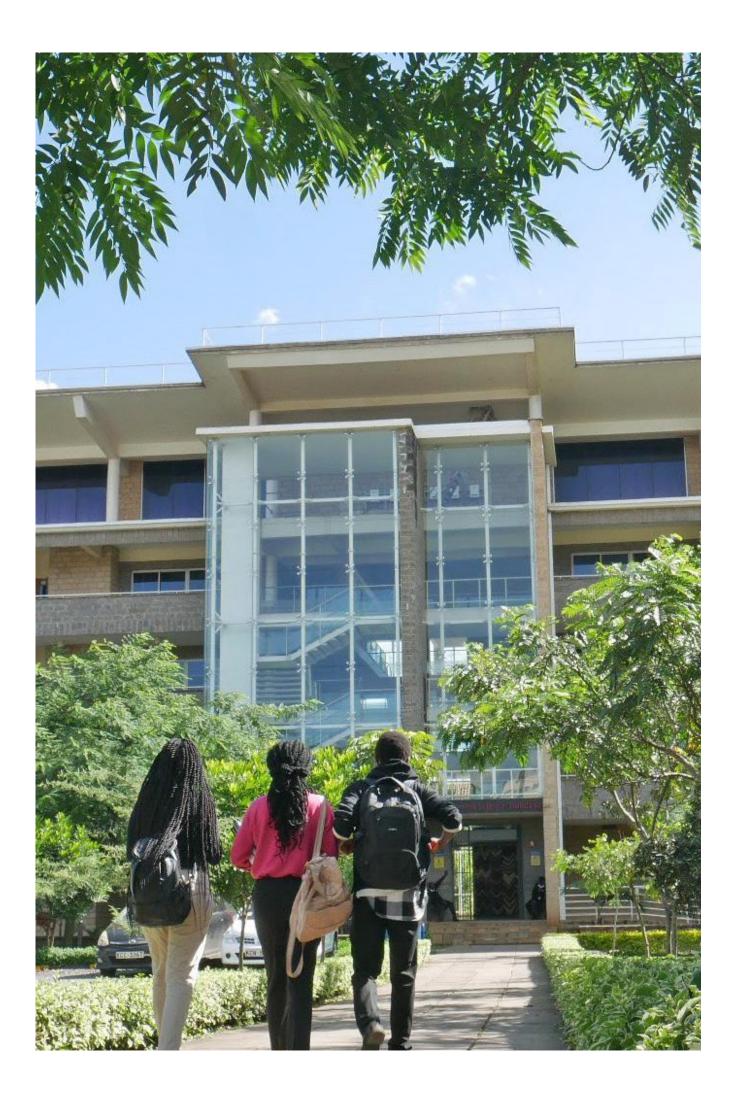
- The applicant must sit and pass the Graduate Entrance Exam (GEE) administered at the Graduate school every Wednesday and Friday at 2pm. The applicant should report to the admissions office on the interview day. PS: GEE is a written exam
- 2. Complete the Graduate Studies application form and attach relevant documents.
- Provide the original Undergraduate degree certificate and transcript of records (TOR) in English giving full details of subjects studied and grades/marks obtained.
- Provide certified copies of the above-mentioned (no.4) – undergraduate degree certificate and transcript of records.
- 5. Provide the original and the certified copy of Secondary/High school certificate e.g. KCSE certificate
- Provide English language proficiency results where required.
- Attach two (2) completed Reference Forms from former undergraduate/graduate professors and/or employer particularly qualified to attest to the applicant's qualification for graduate study.
- 8. Attach an updated Curriculum Vitae/Resume
- 9. 2 passport size photos.
- 10. Provide a copy of National Identity Card (ID) or copy of Passport (bio data page)
- 11. Kshs 2500/- Interview fee payable on the interview day.

### Why Strathmore University?



- 1. Global exposure and international outlook: Strathmore's international faculty and partners, global alumni network and diverse student body connect you with a world of opportunities.
- 2. A Pioneer in Standards: Strathmore University, its alumni and its partners have always been at the forefront of business education and standards. It is the first university in Kenya to become ISO 9001:2000 certified.
- 3. World class facilities: Strathmore has avant-garde architecture that has been designed and built uniquely and in compliance with energy conservation requirements ensuring a holistic learning experience for students.

- 4. People-oriented: Strathmore believes that people matter. They are the heart of any organization and key to sustaining any organization. People are always our main focus in all we do. We give you personalized education, with special emphasis on human and ethical values.
- 5. Teaching staff: Our dedicated teaching staff are active professionals bring you up to speed with real life situations through innovative teaching and individualised attention and guidance.





### **Strathmore University**

Institute of Mathematical Sciences

### FOR MORE DETAILS CONTACT:

Admission Office, Strathmore University P.O. Box 59857 - 00200 City Square, Nairobi, Kenya Tel: + 254 (0)703 034000 / 2203 / 2232 / 2297 0703 034 000/ Ext: 2359, 2112, 2115

$$\label{eq:constraint} \begin{split} \texttt{Email: admissions@strathmore.edu, sims@strathmore.edu} \\ \texttt{ims@strathmore.edu} \end{split}$$

www.sims.strathmore.edu