Master of Financial Engineering [CM043FTX19]

Convener: D Taylor

Entrance requirements:
There are limited places on the degree and admission is based on merit. Applicants must have an Honours (or four–year equivalent) degree from one of the Faculties of Science, Commerce or Engineering, with at least two years of mathematics. Candidates should be aware that this is predominantly a mathematical degree and preference will be given to candidates with a strong background in a mathematical science. Admission is at the discretion of the admissions committee and meeting the minimum requirements does not guarantee acceptance.

Once admitted, entrants must pass the preliminary courses to continue with the degree.

Programme outline:
The African Institute of Financial Markets and Risk Management in association with the Department of Finance and Tax offers a full-time professional Master of Financial Engineering degree. The programme has been designed to accommodate students from a wide variety of backgrounds. This degree is mathematical in nature and requires a high level of skill in statistics and mathematics. The curriculum is intensive and challenging and combines training in applied mathematical, statistical and computing skills with a solid understanding of financial markets and risk management.

The curriculum consists of 2 preliminary courses that run in the 3 weeks prior to the start of the degree, 135 credits of compulsory coursework, and a 45-credit compulsory research component. Graduates of this degree will be well-equipped for careers in technical areas of investment banking, asset management, risk management, or any career where a quantitative finance or financial engineering background is useful. They may also pursue doctoral research in quantitative finance.

Duration:
The degree is offered over one year, full–time, and begins in January.

Prescribed curriculum:
[CM043FTX19]

Course code	Course name	NQF Credits	HEQSF Level
Non-credit bearing preliminary courses			
FTX4090Z	Quantitative Finance Skills	0	8
FTX4088Z	Mathematical Computing Skills	0	8
First Semester			
FTX4089F	Introduction to Financial Engineering	15	8
FTX5058F	Stochastic Financial Modelling I	30	9
FTX5056F	Computational Finance I	15	9
Second Semester			
FTX5059S	Stochastic Financial Modelling II	15	9
FTX5057S	Computational Finance II	30	9
First and Second Semesters			
FTX5060W	Financial Engineering Research	45	9
FTX5055H	Financial Instruments, Risk and Regulation	30	9
	Total:	**180**	

The objective of the courses Quantitative Finance Skills and Mathematical Computing Skills is to harmonise knowledge of the fundamental tools in mathematics, statistics, mathematical computing, finance and derivatives needed to follow the remainder of the programme. A full course (30 NQF credits) typically consists of 48 contact hours. However, the specific organisation of each course will be adapted according to the learning needs.

Assessment:
To qualify for the degree, the candidate must first pass the precourses, Quantitative Finance Skills and Mathematical Computing Skills, and then pass all the compulsory courses.

Readmission rules:
A candidate who fails any of the courses required for successful completion of the degree during the first year of registration, will be allowed to repeat them in the following academic year.
Courses may only be repeated once.
The courses Quantitative Finance Skills and Mathematical Computing Skills may not be repeated.

Distinction rules:
The degree will be awarded with distinction if the candidate obtains a mark of at least 75% for each of the compulsory components of the degree.

Further specific administrative requirements:
In addition to completing the University application form, an applicant must submit all academic transcripts, a Curriculum Vitae and a letter of motivation.
Application for the following year must be made by 30 September.