

> Mathematics for Quantitative Finance

Classroom programme or distance learning

"10 years after my degree I found myself distinctly rusty on mathematical techniques. With 7city's quick and easy to follow Mathematics for Quantitative Finance course, I was amazed at how quickly my mathematical brain caught up. The informative course materials and accessible lecture style also made new topics easy to follow and provided an excellent entry point for further study in Quantitative Finance"

Mathew Webb MA (Cantab) Natural Sciences (Physics) Solicitor, CQF delegate

> Mathematics for Quantitative Finance

Mathematical finance is now a pre-requisite for City practitioners. The Mathematics for Quantitative Finance programme attracts individuals from a wide range of roles and academic backgrounds. It is extremely useful for those who feel 'rusty' due to a long period away from the mathematics learning / application environment, providing a short and intense refresher.

The programme is divided into two modules:

- > Module M1: Calculus & Differential Equations Refresher
- > Module M2: Linear Algebra & Probability Refresher

Your Questions Answered

Is this course suitable for me?

There are generally two types of delegates enrolling onto the course. The first seeks a short but intensive refresher in the areas of calculus, differential equations, linear algebra and probability. The second is a prospective CQF delegate, someone who wishes to enrol for the CQF but has not been exposed to mathematics for a considerable length of time.

Who are some of your past delegates?

Previous delegates include those who have not studied maths beyond 'A' - level, through to physics graduates who have been in employment for several years and need to brush up on their quantitative skills.

"The Maths Primer is an excellent and outstanding course that covers the basic mathematics necessary for introductory level quantitative finance. I consider this to be an "intensive" course but Riaz's delivery made it extremely insightful and interesting. I found the experience enjoyable...I would certainly recommend this course."

James Dimech De Bono
Ernst & Young

What support will I receive throughout the programme?

During the programme you will have continual access to your tutor outside the classroom sessions, either via phone, e-mail or 1-2-1 tutorials held at the 7city training centre.

What knowledge will I have by the end of the course?

After six classroom sessions you will leave the programme having had a grounding in the same type of introductory maths which a first year maths undergraduate would have in the first few weeks at university.

What happens if I am called away on business and miss a class?

All classroom sessions are recorded. You will have continual access to these via your 7C-Online account and therefore will be able to access missed classes at a time convenient to you.

Are six sessions sufficient?

A large volume of material is covered within the programme. You will not be expected to absorb everything immediately. However, to gain maximum benefit from attending the course, it is very important to work through the notes and associated problem sheets. For this reason you will be encouraged to maintain contact with the tutor, with a view to discuss any problems, both during and after completion of the programme.

Does choosing the distance learning option put me at a disadvantage?

Distance-learning delegates conference into the Maths for Quantitative Finance lectures and participate alongside classroom delegates. The course lecturer maintains a two-way dialogue to ensure questions are addressed throughout the session. Therefore, you are able to have the same level of interaction with the tutor and will be able to see and hear the lecturer, lecture notes and hand-written annotations. You will also receive the same level of outside class study support.

"I thought Mathematics for Quantitative Finance was excellent. Prior to the course I hadn't done any serious maths for five years...the level of prior knowledge assumed was just right and I thought the pace, while intense, was also just right for me. I was surprised at how much came back in a relatively short period of time."

Hugh Tallini
BNP Paribas

Course Syllabus

Module M1: Calculus & Differential Equations Refresher

Functions of a single variable:

- o Ordinary calculus
- o Ordinary differential equations
- o Solution methods
- o Basic numerical integration
- o Simple integral equations

Functions of two or more variables:

- o Partial differential calculus
- o Partial differential equations
- o Classification
- o The diffusion equation
- o Solution methods
- o Basic numerical methods

Module M2: Linear Algebra & Probability Refresher

Matrices:

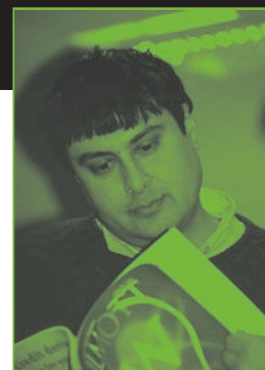
- o Matrix manipulation
- o Eigenvalues and eigenvectors
- o Exponentiation

Elementary probability theory:

- o Distributions, discrete and continuous
- o First and second moments (mean and variance)
- o Higher moments (skew and kurtosis)
- o Important distributions
- o Correlation
- o Central limit theorem

Basic Stochastic Calculus:

- o Random walks
- o Brownian motion
- o Itô's lemma



Course Director: Dr Riaz Ahmad

Dr Riaz Ahmad received advanced degrees in mathematics from University College London and Imperial College London. He has held academic positions at Imperial College, Lahore University of Management Sciences (LUMS), Pakistan and more recently Oxford University (Mathematical Institute), where he was also assistant academic director of the university's M.Sc. Mathematical Finance Program. Riaz is full-time director at 7city for all mathematical and computational finance based courses. In addition he oversees 7city's Quantitative Finance series and consults on mathematical finance issues to City Institutions. His research interests are in theoretical and numerical/computational methods for derivative pricing and Islamic Banking. Riaz is a visiting faculty member at LUMS where he teaches executive education courses in derivatives to finance practitioners (as well as on the MBA).

Previous delegates include individuals from the following companies:

Morgan Stanley
Deutsche Bank
Chicago Equity
Barclays Capital
ABN Amro
BNP Paribas

JP Morgan
Barclays Global Investors
CSFB
Ernst & Young
Lehman Brothers

Course: Evening

Duration: Six 2½ hour evening sessions

Time: 6:00pm - 8:30pm

Dates: 26, 27, 29, 30 September, 3 & 4 October; 28, 29, 30 November, 1, 5 & 6 December

Cost: £1,495 + VAT

(discounted price of £1,250 + VAT for delegates enrolled on the CQF programme)

For further details on the Mathematics for Quantitative Finance course, or any other quantitative finance programmes, please contact:

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Quantitative Finance courses include:

- o Certificate in Quantitative Finance
- o Mathematics for Quantitative Finance
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- o Volatility, Advanced Modelling with PC Workshops
- o VG Modelling: Pricing Financial Derivatives in Equity and Credit Risk