A message from the Course Director

Welcome to our program for practitioner education in quantitative finance. In this brochure you will find details of our flagship, the Certificate in Quantitative Finance. Our training is delivered simultaneously live in the classroom and via international webcast. This global delivery puts us at the forefront for distance learning. Our team of lecturers consists of full-time staff chosen for their training skills and dedication to client satisfaction, along with respected and experienced practitioners working in banking and hedge funds.

Finance is an extremely fast-paced and increasingly sophisticated profession. We can help you and your company stay ahead of the competition. We are proud of the quality and relevance of our quantitative finance program, and we are continually striving to keep it the best in the world. I look forward to working with you.

Dr Paul Wilmott
Course Director

Key Facts

- Six-month part time course
- Up to 175 delegates enrolled per program
- 95% of delegates work within the financial services industry
- 60% of delegates are sponsored by their employer
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<th>2008</th>
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<tr>
<td>London</td>
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</tr>
<tr>
<td>London</td>
<td>11th December</td>
<td>10th June</td>
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New for 2008

Maths Primer

We now include a pre-CQF Maths Primer Course. A short, sharp but intensive course designed for delegates who need to brush up on their maths skills. See page 7 for more details.

In addition to our CQF Alumni Classes we now offer a series of CQF Masterclasses, lasting 1 or 2 days, they cover key CQF elements and aid your CQF LifeLong Learning. See page 14 for more details.

To book your place email: cqfopenday@7city.com
Introduction

The Certificate in Quantitative Finance (CQF), launched in January 2003, has been designed to provide a high-level training course for individuals working in, or intending to move into, derivatives, quantitative trading and risk management. Faced with an ever-increasing range of generalist financial courses, the CQF is unique in its structured approach and commitment to the field of practical quantitative finance.

The Certificate in Quantitative Finance (CQF) has been designed by Dr Paul Wilmott, one of the most experienced and respected trainers in quantitative finance. He has lectured extensively in both academia and to the banking community and has also founded a university degree course. His association with both the theoretical aspects of quantitative finance and the real-world application makes him uniquely able to design and deliver a structured course that meets the needs of the modern quantitative analyst. His emphasis is on the education of practitioners, making entry into this subject, and progression to the highest level, as painless as possible. He firmly believes that the subject can be understood by anyone with a modest background in mathematics.

This six-month intensive program consists of thirty two straight-to-the-point formal lectures and other more informal workshops which deliver the necessary knowledge base and skills needed to succeed in this fast-paced working environment. This Certificate provides an in-depth coverage of practical quantitative methods important in today’s financial markets.

Key Facts from the June 2007 Program

- **Number of delegates admitted:** 156
- **Average age:** 29 years
- **Range of ages:** 22 to 57 years
- **Average work experience:** 4 years
- **Range of work experience:** 1-34 years
- **Number of different nationalities:** 15
Applicant Profile

CQF delegates come from a rich diversity of backgrounds, responsibilities, and nationalities, bringing a wealth of experience to the program.

The typical participant will be a market practitioner currently employed in a bank or other financial institution. However, the course is also suitable for graduate students wishing to enter the financial markets. Some mathematical experience and knowledge of the financial markets is useful.

The Certificate will be of special interest to those working in:
- Derivatives
- Risk Management
- Structuring
- Trading
- Fund Management
- Hedge Funds
- Investment Banking
- Banking

Class Profiles

Delegate Profile by Occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Percentage</th>
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<tr>
<td>Risk Management</td>
<td>20%</td>
</tr>
<tr>
<td>IT</td>
<td>16%</td>
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<tr>
<td>Trading</td>
<td>11%</td>
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<td>Quantitative Analysis</td>
<td>10%</td>
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<td>Consulting</td>
<td>7%</td>
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<tr>
<td>Derivatives</td>
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<td>Hedge Funds</td>
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<td>Structuring</td>
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<tr>
<td>Fund Management</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>5%</td>
</tr>
<tr>
<td>Academia</td>
<td>3%</td>
</tr>
<tr>
<td>Actuary</td>
<td>3%</td>
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</tbody>
</table>

Delegate Profile per Academic Discipline

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Finance</td>
<td>20%</td>
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<tr>
<td>Maths</td>
<td>17%</td>
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<tr>
<td>Computer Science</td>
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<td>Engineering</td>
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<td>Business</td>
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<td>Economics</td>
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<tr>
<td>Statistics</td>
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<td>Banking</td>
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<tr>
<td>Physics</td>
<td>4%</td>
</tr>
<tr>
<td>Others</td>
<td>3%</td>
</tr>
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</table>

“...The CQF program allowed me to grasp the mathematics behind a wide variety of derivative products and market models. It was invaluable in helping me understand the theory and practical application of a broad range of derivative structures.”

Tim Mills, CFA, CQF delegate, January 2004
Each module includes:
- Five classes of 2.5 hours scheduled over one month (with the exception of Module 6 which includes seven classes)
- Four problem sheets
- One week after receiving a problem sheet delegates receive the solutions
- One modular exam which is given out in the last class and completed in one week (with the exception of Module 6 which is assessed with a project)
- One exam review workshop to prepare you for the exam (with the exception of Module 6)
- Delegates successfully complete a module when they score 60% or over in the exam/project. They can then proceed to the following module

Each class:
- Can be attended live either in the classroom or via webcast
- Can be viewed as a recording on your personal learning resources webpage within 48 hours of the lecture taking place. This recording is available in perpetuity
- 24 hours prior to the lecture you will be e-mailed class notes and related problem sheets (where appropriate)
- We recommend 8-12 hours of self study per week

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**Core CQF Program**

**Module 1:**
Basic Building Blocks of Finance Theory and Practice

**Module 2:**
Risk and Return

**Module 3:**
Equity, Currency and Commodity Derivatives

**Module 4:**
Interest Rates and Products

**Module 5:**
Credit Products and Risk

**Module 6:**
Advanced Topics

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**MASTERCLASSES DEDICATED TO A THEME**

**CQF Masterclasses** (pages 14 & 15)

**BUILD UP YOUR PROGRAMMING SKILLS**

**Practical Computational Finance in C++** (pages 16 & 17)

**LIFELONG LEARNING**

**CQF Alumni Extra Lectures** (pages 12 & 13)
Mathematics for Quantitative Finance
Classroom program or distance learning

Mathematical finance is now a pre-requisite for City practitioners. The Mathematics for Quantitative Finance program 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 program is divided into two modules:
- Module M1: Calculus and Differential Equations Refresher
- Module M2: Linear Algebra and Probability Refresher

Module M1
Calculus & Differential Equations Refresher
Calculus:
- Functions and limits
- Differentiation and integration
- Taylor series
- Complex numbers
- Functions of several variables
- Gamma and beta function
- Numerical integration

Differential Equations:
- First order equations
- Second and higher order equations
- Partial Differential Equations
- Diffusion equation
- Black-Scholes equation

Module M2
Linear Algebra & Probability Refresher
Linear Algebra:
- Matrices and Vectors
- Systems of linear equations
- Eigenvalues and eigenvectors
- Vector spaces

Elementary Probability Theory:
- Discrete and continuous distributions
- Simple moments (mean and variance)
- Higher moments (skew and kurtosis)
- Important distributions
- Correlation
- Central Limit Theorem

Basic Stochastic Calculus:
- Random walks/SDE
- Brownian motion and Itô’s lemma
- Basic Monte Carlo

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, University College London and Oxford University (Mathematical Institute), where he was also assistant academic director of the university’s MSc Mathematical Finance Program. Riaz is full-time director at 7city for all mathematical and computational finance based courses. His research and academic interests are in the theoretical and computational methods for derivative pricing and Islamic finance.

Course 2007
London
Course Choices (from 6:00pm to 8:30pm for session 1-6 and from 6:00pm to 8:00pm for session 7):
- 3rd, 4th, 5th, 6th, 7th, 10th September and 7th November
- 15th, 16th, 17th, 18th, 19th, 22nd October and 7th November
- 3rd, 5th, 6th, 10th, 12th, 13th and 14th December

New York
Course Choices (from 6:00pm to 8:30pm):
- 19th, 20th, 21st, 22nd, 23rd and 26th November

Course 2008
London
Course Choices (from 6:00pm to 8:30pm for session 1-6 and from 6:00pm to 8:00pm for session 7):
- 3rd, 4th, 5th, 7th, 10th, 11th and 12th March
- 7th, 8th, 10th, 11th, 14th, 15th and 16th March
- 12th, 13th, 16th, 17th, 18th, 19th and 20th June

New York
Course Choices (from 6:00pm to 8:30pm):
- 28th, 30th April and 2nd, 5th, 6th, 7th and 8th May
- 30th May and 2nd, 3rd, 4th, 5th, 6th and 9th June
Pre-Course Maths Primer

We now include a Maths Primer course at the beginning of the CQF. This primer course is ideal for pre-CQF delegates looking to brush up on their math skills. It is a short but intensive refresher in the areas of calculus, differential equations, linear algebra and probability.

Some things you may wish to consider:
- Mathematical finance is now a pre-requisite for financial practitioners
- This course is designed for those working full time – no time away from the office
- Delivered via 7 evening lectures in the classroom or via distance learning
- Every class is recorded and available online for playback in perpetuity
- You will receive continual access to a personal tutor via phone and email or in person

Module 1
Basic Building Blocks of Finance Theory and Practice

It will be necessary to bring all students up to the same technical level. Most students will be familiar with the contents of this first module, but any gaps in a student’s background will be identified and appropriate private study recommended. We introduce the rules of applied Itô calculus as a modelling framework. Simple stochastic differential equations and their associated Fokker-Planck and Kolmogorov equations are introduced.

- Important mathematical tools and results
- Taylor series
- Probabilistic concepts
- Stochastic calculus and Itô’s Lemma
- Transition density functions
- Central Limit Theorem
- The random behaviour of asset prices
- Martingale theory

Module 2
Risk and Return

This unit deals with the classical portfolio theory of Markowitz, the Capital Asset Pricing Model, more recent developments of these theories, also option types and strategies. We see the rudiments of option pricing principles and theory in the binomial model.

- Modern Portfolio Theory
- Capital Asset Pricing Model
- Asset allocation in continuous time
- Value at Risk
- Modelling and measuring volatility
- Financial markets and products
- The binomial model for asset prices

Module 3
Equity, Currency and Commodity Derivatives

The Black-Scholes theory, built on the principles of delta-hedging and no arbitrage, has been very successful and fruitful as a theoretical model and in practice. The theory and results are explained using different kinds of mathematics to make the student familiar with techniques in current use.

- Hedging and the Greeks
- The Black-Scholes model
- Option strategies
- Early exercise and American options
- Elementary Monte Carlo simulations
- Elementary finite-difference methods
- Martingale theory for pricing
Module 4

Interest Rates and Products
This module starts with a review of fixed-income products and the simple but useful concepts of yield, duration and convexity, showing how they can be used in practice. The limitations of this approach and the need for a more sophisticated theory are explained. Many of the ideas seen in the equity-derivatives world are encountered again here but in a more complex form.

• Fixed-income products
• Yield, duration and convexity
• Stochastic spot-rate models
• Calibration
• Data analysis
• Convertible bonds
• Heath, Jarrow and Morton

Module 5

Credit Products and Risk
Credit risk plays an important role in current financial markets. We see the major products and examine the most important models. The modeling approaches include the structural and the reduced form, as well as copulas.

• Credit risk and credit derivatives
• CDS pricing, market approach
• Synthetic CDO pricing
• Risk of default
• Transition matrices
• Copulas

Module 6

Advanced Topics
The lognormal random walk and the Black-Scholes model have been very successful in practice. Yet there is plenty of room for improvement. The benefits of new models will be discussed from theoretical, practical and commercial viewpoints. When pricing complex products it is necessary to be able to correctly value vanilla products. Modern models adopt frameworks that ensure that basic products are perfectly calibrated initially. The models derived in earlier parts of the course are only as good as the solution. Increasingly often the problems must be solved numerically. We explain the main numerical methods, and their practical implementation.

• Transaction costs and discrete hedging
• Stochastic volatility and jump diffusion
• Non-probabilistic models
• Exotic options
• Static hedging
• Brace, Gatarek and Musiela
• Monte Carlo simulations
• Quasi-Monte Carlo methods
• Finite-difference methods

Course Reading
Delegates will be provided with the following course reading material:

• Paul Wilmott Introduces Quantitative Finance (P. Wilmott)
• Paul Wilmott On Quantitative Finance (P. Wilmott)
• FAQs in Quantitative Finance (P. Wilmott)
• Advanced Modelling in Finance Using Excel and VBA (M. Jackson and M. Staunton)
• The Complete Guide to Option Pricing Formulas (E.G. Haug)
• Derivatives: Models on Models (E.G. Haug)
• Monte Carlo Methods in Finance (P. Jäckel)
• Structural Credit Products: Credit Derivatives and Synthetic Securitisation (M. Choudhry)
• 1 year’s subscription to Wilmott magazine

“The course is brilliantly structured, covering a wealth of topics and models in depth and the modular organisation is excellent, creating a genuine learning path. Delegates are able to gradually develop an understanding of the fundamental concepts of quantitative finance through a combination of both theory and application.”

Sébastien Lleo, MBA, CFA, FRM, PRM, CQF Delegate, January 2003
Course Delivery

Part-time Classes and Workshops
The CQF is designed for delegates in full-time work and does not require any time away from the workplace. By dividing the course content over 24 weeks, delegates slowly build up their knowledge session by session.

Delegates are provided with a complete set of course notes for each class and these are annotated by the Course Instructor during the session. Some classes will comprise computer workshops and delegates receive data files 24hrs before the class.

Classroom Delivery
All the classes and workshops are delivered from our London training center at 6pm (London local time). Delegates can access the class via three methods:

Classroom
Approximately 35% of delegates in each program follow the course by attending the classes held at our London training center. The class holds up to 70 delegates.

Live Webcast
Delegates dial into the class from their home/office. Approximately 35% of delegates dial into the class via the internet.

Recorded Classes
Delegates can access each weekly class online in their own time. Approximately 30% of delegates take this option.

Online Access
Delegates who choose to dial into the class can view both the instructor and the presentation simultaneously, as if they were in the class. If delegates have a question they post this to the tutor chat box. The tutor will then repeat the question to the class, before proceeding to answer. The same approach is applied if a delegate in the London class poses a question.

Each weekly class is recorded while being delivered. The classes are then posted online. Every delegate is provided with their own online account allowing them to access to the following:

- Recorded class lectures
- Annotated class notes
- Data
- Sample code and spreadsheets
- Additional/non-examined classes

Curtis Zubot

Previous Degree: BA Honors in Economics
University of Alberta, Canada

Current Position: Options Trader
Integrated Supply and Trading
BP p.l.c.

Most people interested in quantitative finance are already very mathematical. Better than any course I have ever been involved in, the CQF acknowledges that people like me are not interested in expanding my mathematical background, but rather would like to learn how to apply my talents. The instructors do an excellent job of helping bridge the gap between academia and the real world. Three months after completing the CQF I was promoted from fundamentals analyst to options trader. The CQF helped me make the leap faster than I ever thought possible.

The tutors are really supportive and always try to provide solutions to problems, however difficult. Paul Wilmott is a great tutor and the lessons are always clear and interesting.

Andrea Germani, CQF delegate, January 2003
Examination Assessment

The Certificate in Quantitative Finance is awarded to delegates based on their performance in the compulsory module examinations. There are three main areas of assessment:

1. **Weekly Exercises**
   Delegates are provided with exercises following the first three sessions of each module. The exercises test the information covered during the respective session and can be in the form of mathematical computations, mini essays or spreadsheet exercises. The exercises are optional and allow each delegate to determine if they have understood the concepts taught. If delegates experience problems with a certain area, a one-to-one tutorial can be arranged.

2. **Module Examinations**
   The objective of the exam is to ensure delegates have a full understanding of the principles taught and their applications.

   Examinations are issued for the first five modules, following the last session of each module and delegates have one week to answer the exam paper. The exam is open book, so lecture notes can be used for reference. Delegates must receive a mark of 60% or greater to pass the module.

3. **Project Work**
   All delegates have to complete two pieces of project work for Module 6. These are practical programming projects which are set during the second half of the course and designed to ensure delegates apply their theoretical knowledge to real-life problems, that they can then bring back to the workplace. The project scoring the highest mark is profiled on wilmott.com.

**Final Examination/Distinctions**

The final three-hour examination is optional. Delegates have to score 80% or above to receive the distinction. The examination is fully invigilated and covers subjects from all modules.

**Wilmott Prize for Excellence**

From each class, one delegate will receive the “Wilmott Prize for Excellence”. The award will be made to the delegate attaining the highest score in the final examination.

**Publication of Results**

Each program’s results are listed in the following publications:

- Financial Times (International Edition)
- Economist
- Wilmott magazine
The CQF alumni community is continually expanding as a network of friends and contacts all over the world. The current network consists of more than 600 CQF alumni, an exclusive global community of quantitative practitioners. We invest in the future of the network through a range of events, publications, a directory and a dedicated website. As a CQF alumnus, and even before you complete the CQF, you will become part of an active Alumni community, attending social and educational events. Various resources are available exclusively to help CQF alumni and these are all located on the Alumni website, which you will have automatic access to when you join the CQF.

**CQF Alumni Directory**
The online directory enables you to stay in touch with classmates and locate new business-related contacts.

**Continuing education**
Continuing education is paramount in the world of mathematical finance. To ensure CQF alumni are supported after they have obtained their qualification, additional regular classes are delivered on both technical and topical issues. These classes are delivered by the CQF faculty in addition to world-class practitioners including:
- Professor Bill Ziemba
- Nassim Nicholas Taleb
- Pat Hagan
- Professor Wim Schoutens
- Henriette Prast

All classes can be attended in the classroom and live or recorded via the Alumni Website as part of the CQF continuing-education program.

The CQF is unique in allowing delegates permanent, unrestricted access in perpetuity to all existing and future learning resources. This means that alumni can maintain and further their professional development, keeping their knowledge and skills at the forefront of the field, at no additional cost.

The CQF library is constantly being updated and added to. Additional classes and resources are stored in this single place, allowing delegates and alumni to track and enhance their knowledge base. For examples of these additional classes see page opposite.

**Events**
A regular program of seminars, dinners, and networking events to keep in touch.

**CQF Alumni Newsletter**
The CQF newsletter keeps you up-to-date with what is happening in the CQF alumni community and will inform you of related courses and events.

“*One of the most useful and rewarding experiences is continued access to course material, additional topical seminars and other reference materials. This provides the means to stay current and review old topics as and when necessary.*”

Kashif Rashid, CQF delegate, January 2007
Lifelong Learning

Please find below a selection, from our continually expanding library of extra classes, available to you for Lifelong learning with the CQF.

<table>
<thead>
<tr>
<th>Category</th>
<th>Example lecture</th>
<th>Lecturer</th>
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<tbody>
<tr>
<td>Mathematics</td>
<td>American Options</td>
<td>Riaz Ahmad</td>
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<td>Can You Feel the Heat? Inverse Problems in Finance</td>
<td>Andreas Binder</td>
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<td>Fundamentals of Optimization</td>
<td>Sebastien Lleo</td>
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<td>Can You Count on Your Correlation Matrix?</td>
<td>Nicholas J Higham</td>
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<td>Singular Perturbation Problems Arising in Mathematical Finance</td>
<td>Peter Duck</td>
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<td>Financial Modelling using GARCH Processes</td>
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<td>Numerical Methods</td>
<td>Monte Carlo Simulation and Early Exercise</td>
<td>Paul Wilmott</td>
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<td>VBA Workshop</td>
<td>Mike Staunton</td>
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<td>An Introduction to Spreadsheet Risk</td>
<td>Grenville Croll</td>
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<td>Software Issues in Wavelet Analysis of Financial Data</td>
<td>Robert Tong</td>
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<tr>
<td>Equity</td>
<td>Exotic Options</td>
<td>Paul Wilmott</td>
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<td>The &quot;Non-Greek&quot; Non-Foundation of Derivative Pricing</td>
<td>Elie Ayache</td>
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<tr>
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<td>How to Hedge: Which Free Lunch Would You like Today, Sir?</td>
<td>Paul Wilmott</td>
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<td>Equity-to-Credit: the Death of the Implied Volatility</td>
<td>Philippe Henrotte</td>
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<td>Volatility Forecasting, Option Trading and Crash Metrics</td>
<td>Paul Wilmott</td>
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<td>Fixed Income</td>
<td>The Heath, Jarrow and Morton Model</td>
<td>Paul Wilmott</td>
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<td>Advanced BGM</td>
<td>Peter Jaeckel</td>
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<td></td>
<td>Managing Smile Risk</td>
<td>Patrick Hagan</td>
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<td>Fixed Income Modelling</td>
<td>Claudio Albanese</td>
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<td>Portfolio Management</td>
<td>Investment Lessons From Blackjack and Gambling</td>
<td>Paul Wilmott</td>
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<td>Credit</td>
<td>Jumps in Credit Risk Modeling</td>
<td>Wim Schoutens</td>
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<td>Pricing of CDOs using Levy Copulas</td>
<td>Wim Schoutens</td>
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<td>Copulas: Applications to the Pricing of Credit Derivatives</td>
<td>Sebastien Lleo</td>
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<td>Credit Modelling: A Structural Model for Credit-equity Derivatives and Bespoke CDOs.</td>
<td>Claudio Albanese</td>
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<td>Risk Management</td>
<td>Infinite Variance: Who Cares about Variance?</td>
<td>Nassim Nicholas Taleb</td>
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<td>There is No Way to Run an Economy</td>
<td>Aaron Brown</td>
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<td>Scenarios and Risk Control for Hedge Funds</td>
<td>William Ziemba</td>
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<td>Volatility in Disguise: How to add pricing libraries for short rate models into a VaR system: Finance Focus</td>
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<td>The Scandal of Prediction</td>
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<td>Trading Derivatives: Real Markets, Real Model, Real Smiles.</td>
<td>Nasir Afaf</td>
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<td>Programming</td>
<td>What the Spreadsheet Said to the Database</td>
<td>Brian Sentance</td>
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For a more detailed breakdown of the CQF extra lectures available please refer to our website at www.7city.com/cqf_alumniclasses
Omid Ebrat

Previous Degrees:
MSc in Mechanical Engineering
The George Washington University, Washington DC
PhD in Mechanical Engineering
The University of Michigan, Michigan

Current Position:
VP Quantitative Finance (Proprietary Trading), Bank of America

Taking the CQF Program was one of the best decisions I have ever made in my professional life. I already had a graduate degree in engineering and was working fulltime in the automotive industry when I decided to pursue a career in finance. Despite tremendous enthusiasm, I had limited time during evenings and weekends to prepare myself to compete for a quant position on Wall Street. A short trip to London and meeting with CQF course directors finalized my decision to take the program. The CQF, in my opinion, offers an exceptional blend of the most important topics in Quantitative Finance with an elegant balance of its fundamental, analytical, and numerical aspects. I also found the hands-on implementation of pricing model simulations very useful. Believe it or not, I’ve enhanced a couple of them and put them to use at work in a trading environment. Since I’ve made the transition to financial industry, I realized the calibre of my education during the CQF program. I continue to recommend the program to friends and the Quantitative Finance enthusiasts.

Alumni Masterclasses

As part of the CQF continual learning we now offer Alumni Masterclasses.

Volatility, Advanced Modelling with PC Workshops

This course takes a critical look at the most important unknown in derivatives pricing; volatility. The main modelling approaches are all presented, along with their advantages and disadvantages. Concepts are studied from both a scientific and a practical point of view with the goal being to give the delegates the deepest possible understanding of the significance of their choice of model. Paul Wilmott brings to this course many years as a mathematical modeller in scientific disciplines as well as his experience forecasting volatility and as a partner in a very successful volatility arbitrage hedge fund.

The course will cover:
• The important volatility forecasting methods explained
• The many meanings of volatility
• Calibration to market prices, representing the skew and smile
• Deterministic volatility surfaces
• Stochastic volatility
• Uncertain volatility
• Robustness and minimizing model error, static hedging
• Volatility, static and dynamic hedging and portfolio theory
• The course will feature spreadsheet and VBA workshops.

Tutor: Paul Wilmott
Duration: 2 day course, recordings are separated into 8 sessions.

VG Modelling: Pricing Financial Derivatives in Equity and Credit Risk

This course provides an introduction to the use of the Variance Gamma (VG) based models for equity and credit risk. The course takes a practical approach to describing the theory of advanced models, and features many examples of how they may be used to solve problems in finance, with emphasis on the pricing of financial derivatives.

Starting from the analysis of data, we build up models driven by the nowadays popular VG Lévy processes that incorporate stylized features like jumps and stochastic volatility. We examine the mathematical modelling and the numerical aspects. The course covers a number of key topics, including option pricing, calibration, Monte Carlo simulations, stochastic volatility, exotic options and credit risk. The course also avoids unnecessary mathematical formalities.

What can you learn?
• See the more realistic VG models for stocks and credit risk work on real data
• Which Lévy processes are useful for financial modelling purposes and which are not?
• How to price an option surface of vanillas under advanced models within a second
• Learn about the very recent multivariate VG models that can be calibrated on univariate vanilla surfaces
• Learn about new credit risk models driven by Lévy processes and see how these models can nicely capture the CDS term structure
• Learn how to simulate fast VG based models
  - to price exotics
  - to run scenarios for risk-management purposes
  - to simulate your insurance-linked products under a more advanced setting

Tutor: Wim Schoutens
Duration: 2 day course, recordings are separated into 8 sessions.
Exotic Equity Derivatives, Pricing and Hedging

Exotic Equity Options, Pricing and Hedging is a detailed course on the pricing and hedging of exotic equity derivatives, starting from the analysis of data to build up a vanilla pricing model and then extending this to exotic, over-the-counter products. We examine the mathematical modelling and the numerical aspects, as well as choice of model and dynamic and static hedging. Many real-life term sheets will be analysed. Delegates are encouraged to bring their own term sheets for discussion.

The course will cover:

- The Black-Scholes pricing and hedging framework
- How to categorise exotic options
- The mathematics of path dependency and decision processes
- Pricing models
- Hedging strategies
- Numerical methods for pricing

The course will feature spreadsheet and VBA workshops.

Tutor: Paul Wilmott
Duration: 2 day course, recordings are separated into 8 sessions.

Behavioral Science In Finance: Phenomena, Diagnosis, Therapy

This one day course will give an overview of the latest research in behavioral economics and discuss its implications for market participants. It will challenge the view that individuals take rational decisions provided that they have access to full information.

The course is in two parts:

The first part focuses on anomalies in financial markets and their behavioral explanation. Inefficiencies include the effect of weather, seasons and daylight changes on stock prices; overconfidence and excess trading; loss aversion, regret aversion and the winner/loser asymmetry. The second part focuses on life cycle saving and investment. It will discuss the new paradigm of wealth planning and will argue that campaigns to increase financial literacy are inefficient and may even be counterproductive.

Tutor: Henriette Prast
Duration: 1 day course, recordings are separated into 4 sessions.

Operator Methods in Fixed Income and Credit

Spread over the 8 sessions (2.5 hours each). The first 4 sessions cover Stochastic Monetary Policy Models for Interest Rate Derivatives, and applications to callable CMS spread range accruals. The last 4 sessions cover Structural Models for Credit Equity Derivatives and applications to bespoke synthetic CDOs.

Operator methods are an emerging framework for modelling financial derivatives. The key numerical engine is Level-3 BLAS and in particular matrix-matrix multiplication routines which typically execute on off-the-shelf, massively parallel multi-core GPUs as opposed to CPUs. The mathematics is adapted to this engine and relies on linear algebra and functional analysis as opposed to measure theory and stochastic calculus. From the modelling viewpoint, this framework allows one to specify and calibrate semi-parametric models which are flexible enough to incorporate econometric estimates, thus avoiding the need to restricting to analytically solvable models.

Tutor: Claudio Albanese
Duration: 8 sessions, all 2.5 hours in duration, available in recording.
Practical Computational Finance in C++

C++ in finance
The vast majority of professional software development in quant finance is in C++. To be an effective member of a quant team you need to write high-quality code, and you must also be able to understand the C++ written by others.

Goals of the syllabus
By the end of this syllabus you will be able to take important pricing models, and translate them into working C++ code. Starting with elementary C++, the 25 sessions will cover both the principles and practicalities of producing robust code in a quant finance environment. You will learn not only the theory of design, but also specific details of implementing hardcore techniques in financial maths, as well as connecting your software to applications such as Excel. Uniquely, this course covers the pitfalls and problems that you will face in debugging and faulty design, equipping you for the realities of programming in banks.

Mathematical finance in C++
You will learn the techniques necessary to convert pricing models into the algorithmic form suitable for coding in C++. A wide variety of numerical schemes used in quantitative finance will be used for examples.

Extending the CQF
C++ is critical to a role as a modern quant in a top-tier investment bank, so as part of the continual improvement of the CQF program we are including the entire Computational Finance series as a self-contained subset of the recorded Alumni Classes. CQF delegates who want to take this syllabus are advised to do so after they have completed the CQF, or in parallel with the CQF after discussion with a Course Director.
Introduction
- Loops
- Variables
- Functions
- Pointers
- Arrays

Object Orientation
- Design
- Inheritance
- Reuse

Patterns
- Singleton
- Factory
- Facade

C++ Internals
- Linking
- Memory Model
- Include
- Stack
- Compilation
- Debugging

Excel Add-in DLLs
- Calling
- Hosting
- Debugging
- SafeArrays
- VBA

Templates
- Reuse
- Design
- Pitfalls
- Generic Programming

STL
- Vector
- Map
- Algorithms
- Iterators
- Functors

Exceptions
- Exception Safety

Threading
- Efficiency
- Debugging
- Deadlock
- Semaphores
- Mutexes

Further Topics in C++
- Parsing Expressions
- Quirks of C++ Syntax

Efficient Coding
- Algorithms
- Object Lifetimes
- Late and Early optimisation

Numerical Methods
- Error Analysis
- Root Finding
- Linear Algebra
- Integration Techniques
- Differential Equations

Copulas

Monte Carlo
- Euler
- 1D and 2D Milstein Schemes
- Volatility Modelling
- BGM

Finite Difference
- Explicit
- Implicit
- ADI
- Upwinding
- Stability Analysis

Programming workshop
Optional two-day live programming workshops are given regularly in the London training rooms. These are only for delegates who have successfully completed both the CQF and the Computational Programming syllabus. Please enquire for dates and costs.

All 25 additional lectures are only available online and are free of charge to CQF delegates.

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The C++ course taught me how to implement important quantitative techniques. Turning the formulas into C++ code really gave me a solid understanding of the concepts.

Christopher Grune, CQF delegate
The CQF faculty led by Dr Paul Wilmott is a highly acclaimed team of instructors combining leading academics and practitioners specialised in the field of Quantitative Finance.

### Paul Wilmott
Dr Paul Wilmott is internationally renowned as a leading expert on quantitative finance. His research work is extensive, with more than 100 articles in leading mathematical and finance journals, as well as several internationally acclaimed books on mathematical modelling and derivatives, including the best-selling *Paul Wilmott On Quantitative Finance*, published by John Wiley & Sons. Paul has extensive consulting experience in quantitative finance with leading US and European financial institutions. He has founded a volatility arbitrage hedge fund and a university degree course. Paul has lectured at all levels, to students and to practitioners.

### Espen Haug
Dr Espen Gaarder Haug has worked in derivatives trading and research for more than 15 years. He worked as a proprietary option trader at JPMorgan in New York, and as an option trader for two multi billion dollar hedge funds, Amaranth and Paloma Partners. Before that, he worked for Tempus Financial Engineering, and as an option market maker in Chase Manhattan Bank (now JPMorgan Chase) and Den norske Bank. He has been involved in almost every option market, including equity, currency, fixed income, energy and commodities. Espen Haug has a PhD from the Norwegian University of Science and Technology, and has published extensively in academic and industry journals such as: *Quantitative Finance, International Journal of Theoretical and Applied Finance* and *Wilmott* magazine. He is also a popular lecturer on option pricing, hedging and risk management.

### 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, University College London and 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. His research and academic interests are in the theoretical and computational methods for derivative pricing and Islamic finance.

### Mike Staunton
Dr Mike Staunton is a visiting lecturer in Numerical Methods at Cass Business School in London. He has taught spreadsheet modelling to executives and graduate students since 1985, including for many years an annual program on Equity Portfolio Management in Geneva. He is the co-author, along with Mary Jackson, of *Advanced Modelling in Finance using Excel and VBA*, published by John Wiley in 2001. He is also Director of the London Share Price Database at London Business School and, together with Elroy Dimson and Paul Marsh, has written *Triumph of the Optimists: 101 Years of Global Investment Returns*, published by Princeton University Press in 2002.
Oliver Williams

Oliver has years of experience in structuring and marketing interest rate derivatives. He was associate and subsequently vice president in the Swaps Group at JPMorgan from 1994 to 2002 before joining CSFB Europe as director in fixed income covering derivative marketing to hedge funds. He began his career as associate at the Boston Consulting Group in London and Moscow where he developed a variety of computer-based economic models and worked on privatization-related projects in Russia. He holds an MA in Computer Science and MPhil in Economics from Cambridge University. Oliver is a member of the associate tutor faculty at 7city.

Tim Mills

Tim Mills is Senior Manager of Derivatives Trading at Nationwide Building Society, responsible for hedging the Society’s mortgage, commercial loan and savings portfolio, and in overall charge of the Society’s derivatives portfolio and interest rate positioning. After receiving a Bachelor of Commerce (Hons) in Finance and Economics from the University of Toronto, he has worked for more than 10 years in the financial industry, qualifying as a CFA and ACA with KPMG.

Elie Ayache

Elie Ayache graduated from Ecole Polytechnique in 1987. He then held a position at Banque Indosuez in Paris as one among the first option traders on the floor of MATIF. In 1990, Elie co-founded Transoptions Finance, a subsidiary of Credit Agricole, which specialised in option market making. He personally stood on the floor of LIFFE, in the Bund option pit, until 1995. From 1996 to 1998, Elie headed the R&D of Dexia Asset Management in Paris, where he developed derivatives pricing models. In 1998, Elie created ITO33, a software company specialising in mathematical models and numerical solutions for derivative instruments, particularly convertible bonds and volatility smiles.

Peter Jäckel

Dr Peter Jäckel received his DPhil from Oxford University in 1995. In 1997, he moved into quantitative analysis and financial modelling when he joined Nikko Securities. Following that he worked as a quantitative analyst in the Quantitative Research Centre of the enlarged Royal Bank of Scotland Group where his primary responsibilities were independent model validation and derivatives modelling research. Peter then worked as the Global Co-Head of Financial Engineering at Commerzbank Securities. He is now Global Head of Credit, Hybrid and Commodity Derivatives at ABN Amro. Peter is the author of Monte Carlo Methods in Finance, published by John Wiley & Sons.

Dominic Connor

Dominic has been programming in C and C++ since the 1980s when he graduated from Queen Mary College London. He has built trading systems for bond & equity markets, secure networks for the British government, reviewed C++ compilers for PC Magazine, and debugged operating systems for IBM & Microsoft. At some point he has written code for every major environment including Windows, OS/2, Reuters, Bloomberg, VMS, AS/400, DOS,VM and Unix.

Moorad Choudhry

Moorad Choudhry is Head of Treasury at KBC Financial Products in London. He previously worked as a gilt-edged market maker and sterling bond trader with ABN Amro Hoard Govett Sterling Bonds Limited and Hambros Bank Limited, and in structured finance services with JPMorgan Chase Bank. He began his City career at the London Stock Exchange in 1989. Moorad is a Visiting Professor at the Department of Economics, London Metropolitan University; a Visiting Research Fellow at the ICMA Centre, University of Reading; a Senior Fellow at the Centre for Mathematical Trading and Finance, Cass Business School; and a Fellow of the Securities and Investment Institute.

CQF Alumni are invited to work with Course Directors on a range of research projects following the completion of their program.

Espen Gaarder Haug
Paul Wilmott
Moorad Choudhry
Paul Wilmott

www.7city.com/quants
Entry Requirements

General requirements
Each delegate who is accepted on the course has a high level of intellectual curiosity, a strong interest in finance, and strong analytical skills.

Although there is no specific degree requirement, most delegates will have backgrounds in quantitative disciplines such as mathematics, statistics, the physical sciences, engineering, operations research, computer science, finance, or economics.

Master of Business Administration Delegates should also have familiarity with calculus, spreadsheets and computational problem solving.

Math requirements
The CQF requires a certain minimum level of mathematics. This is the key criteria in determining whether delegates will successfully complete the course.

To ensure delegates have the necessary maths level to enrol onto the CQF we require the applicant to complete a pre-course math test. The test will highlight the level of math required at the start of the program.

Many delegates starting the CQF do so believing that their mathematics is rusty. As part of our offering for the CQF we include a Maths Primer course for delegates who want a structured approach to bringing their calculus up to speed. In addition we can recommend appropriate text books to refresh your math skills.

IT requirements
The program is very practical and some classes require delegates to use of Excel and VBA. Therefore all delegates should be familiar with Excel or a similar spreadsheet package before joining the program. Delegates attending the classroom program will require a laptop computer.

Delegates will not require prior experience in VBA as this will be introduced at the start of the course and supporting workshops will be provided during the first half of the program.

Key Facts
- Open Evenings around the world
- View our sample lectures online
- Pre-course math test to evaluate math level
- A Math Primer to help those feeling “rusty”
- Talk to our alumni and discuss their CQF experience
- Contact us to discuss your eligibility

Yijun Zhao
Previous Degree:
Ms in Computer Science
Kansas City University, United States

Current Position:
Quantitative Trader, Millennium Partners LP, New York

“I believe the CQF is one of the most efficient programs in quantitative finance. This six-month intensive course covers all major areas in finance and teaches both classical and state-of-the-art models used by real-world practitioners. The lecturers often apply intuition to unveil the mysteries of quantitative finance so that it becomes accessible not only to rocket scientists, but also to people with a common math and finance background. After completing the course I felt more confident in applying my knowledge and more career opportunities became available to me.”
The CQF is a mathematical finance program and we must ensure each delegate is fully prepared at the start of the course. In addition, the program represents a significant commitment financially and in terms of study time. The combination of these factors means that it is crucial for potential applicants to obtain as much insight and feedback into the program as possible. We have listed a series of pre-application steps that we strongly advise all delegates to follow before submitting an application.

Step 1
Open Evenings: Potential applicants should try to attend an Open Evening. These are held in Europe, US and Asia and provide a very good opportunity to obtain an overview of the course format, content, and delivery. In addition delegates can meet some of the course faculty including Paul Wilmott and we invite past delegates to each of the events. To see a full list of Open Evenings for the 2007 programs and to book your place, please visit our website at www.7city.com/cqf. For those applicants who cannot attend, the Open Evening presentation can be viewed online at www.7city.com/cqf.

Step 2
Past Classes: Potential applicants can view the following classes online:
• The Random Behaviour of Assets
• The Binomial Model
Both these classes highlight the style of teaching and content delivered throughout the course. The classes also show the format of the online sessions for live webcasts and recorded playbacks. Past classes can be viewed at www.7city.com/cqf.

Step 3
Pre Course Maths Test: Although the test is part of the admissions procedure, it serves as a very useful tool for potential applicants to judge their maths background against the level of maths required at the start of the course. All delegates have to complete the test before starting the program. However, we recognise that many delegates have not formally studied maths for a significant period of time and there is an element of “rustiness” with most applicants. The key indicator for potential applicants is the recognition factor and providing there is sufficient time, the CQF faculty can support those delegates who recognise the subjects tested but need to go back to basics in order to complete the paper.

Step 4
Mathematics Primer: The maths primer was designed for those delegates requiring a structured approach to refreshing their basic maths knowledge, prior to commencing the full CQF program. The course is delivered before the start of each CQF program. However delegates can commence the primer at any time since the course notes and classes can be accessed online and are fully supported by the Course Directors.

Step 5
Additional Reading: Some delegates can prepare via their university notes. However for delegates who require additional guidance a copy of our CQF Learning Pathway (syllabus) is available on request. This includes a full course reading list which highlights the books recommended for additional maths support.

Step 6
Past Delegates: This is considered the most important and valuable step. Past delegates are able to relate the course to their technical experience and provide a realistic insight into the commitment and level of knowledge required to complete the program. They can also discuss the practical applications of the program and the benefits accrued in the workplace following the course. Potential applicants can request contact details for past delegates in the following categories:
• Industry sector
• Academic background
• Geographical region

Step 7
Finally, all potential applicants are advised to contact the CQF Admissions Director (Paul Shaw), the Course Directors (Dr Paul Wilmott and Dr Riaz Ahmad) or Programme Manager (Claire Davies) to discuss their specific situation in detail.
How to Apply & Course Dates

We aim to make applying for the CQF as easy as possible. Delegates wishing to enrol on the course will be required to submit a completed application form which can be requested by contacting cqf@7city.com.

You can either choose to
• **Apply online:** Apply online at www.7city.com/cqf
• **Post the application form to:**
  CQF Admissions Office
  7city learning, 4 Chiswell Street, London EC1Y 4UP, United Kingdom
• **Or fax it:**
  +44 (0)20 7496 8607 to the attention of the CQF Admissions Office.

You will be required to complete a short pre-course mathematics test which will be sent to you once you have submitted the application.

You will need to return the test no later than one week after the end of the course.

Within 2-4 weeks. For those who are taking the Maths Primer you will need to return the test no later than one week after the end of the course.

We operate a rolling admissions system, so early application is strongly advised due to the restricted number of delegates allowed on to each program.

We will acknowledge receipt of your application within 48 hours by email and it will be reviewed within three days. You will then be told whether or not you are being offered a place and the time-scale within which you must make your decision on the offer (usually one month). We might also invite you to be interviewed over the phone with a course director.

## Course dates - CQF

### January 2008

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<tr>
<th>Module</th>
<th>Session 1</th>
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7city Learning reserves the right to change or cancel the published course dates due to unforeseen circumstances.

### June 2008

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## Course dates - Maths Primer

### Maths Primer - Jan 2008 CQF

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<th>Start Date/Time</th>
<th>Location</th>
<th>Session 1</th>
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<tr>
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For full session listings please see www.7city.com/cqf

### Maths Primer - June 2008 CQF

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<th>Start Date/Time</th>
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For full session listings please see www.7city.com/cqf
Table of fees

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<tr>
<th>Course options</th>
<th>Course Fee in £</th>
<th>Course Fee in $</th>
</tr>
</thead>
<tbody>
<tr>
<td>CQF Classroom Learning</td>
<td>£11,950 + VAT</td>
<td>$16,999</td>
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<tr>
<td>CQF Distance Learning</td>
<td>£9,950 + VAT</td>
<td>$16,999</td>
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<tr>
<td>CQF Individual Module Classroom Learning</td>
<td>£2,150 + VAT</td>
<td>$3,150</td>
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<tr>
<td>CQF Individual Module Distance Learning</td>
<td>£1,825 + VAT</td>
<td>$3,150</td>
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Please note the full fees now include the Maths Primer, the examined CQF, C++ programming, Master Classes, Lifelong learning, membership of the CQF Alumni, all materials and books, and access to recordings in perpetuity.

This table shows fees for 2008. The fee covers the costs of registration, course reading material, tuition, and examination. VAT will also be charged to EU resident delegates.

Enrolment conditions
Approved delegates will be required to pay a non-refundable deposit of £900/$1,750 which will entitle them to:
- reserve a place on the next CQF programme
- receive their course reading materials (8 quant text books see page 9 "Program content")
- access recorded Mathematics for Quantitative Finance Primer lectures and associated material
- join a live (classroom or distance) programme Mathematics for Quantitative Finance Primer prior to commencing the CQF

The remainder of your course fees will be due in advance of the course start date.

Cancellations of confirmed bookings are subject to a refund of 100% if notification is provided in writing more than 30 days before start date; subject to 50% refund if notification is provided within 30 days; no refund is applicable if notification of cancellation is within 15 days or non-attendance. Delegates will receive course reading material on receipt of a completed course enrolment form.

Two payment options
- The full fee is normally paid before the program commences.
- Alternatively it is possible to pay module per module. Each module fee needs to be paid prior to the start of the module.

Funding
We appreciate that the CQF is a significant investment for self-financed delegates and direct delegates to the following means of support.

For information on financial assistance to support your learning, please visit www.direct.gov.uk/adultlearning or contact 0800 100 900. *

*available in the UK only

Wilmott Scholarship
The key objective of this scholarship is to provide funds to enable individuals who are currently not in full-time employment or living in a developing country on a low income to further their education in quantitative finance by undertaking the CQF at 7city Learning. This award will be made at the discretion of the Scholarships Committee to an outstanding candidate who, in the opinion of the committee, is deserving and will gain the most from the program.

Who is eligible to apply?
To apply for the Wilmott scholarship, applicants must fulfil the following requirements:
- already been offered a place in the CQF
- not be in full-time employment or living in a developing country on a low income
- can demonstrate a financial need for this award

What does the Wilmott scholarship include?
The scholarships cover 35% of the total tuition.

How do I apply?
As part of the application procedure you will need to include with your form an up-to-date curriculum vitae which briefly summarises your work experience and academic history.

Pacific American Foundation Scholarship
Who is eligible to apply?
This scholarship is for delegates of Pacific American descent who are currently unemployed.

What does the PAF scholarship include?
The scholarships cover 50% of the total tuition.

How do I apply?
As part of the application procedure you will need to include with your form an up-to-date curriculum vitae which briefly summarises your work experience and academic history.

Please contact the admissions office to request your Scholarship Application Form cqf@7city.com or telephone +44 (0)20 7496 8600
Frequently Asked Questions

Q. Who should attend the program?
A. The Certificate will be of special interest to those working in:
   • Derivatives
   • Risk Management
   • Structuring
   • Trading
   • Fund Management
   • IT Investment
   • Banking
   • Hedge Funds
   • Financial Software
   • Consulting

Q. What level of mathematics is required?
A. Delegates should have a numerate academic qualification and should have familiarity with spreadsheet and computational problem solving. Delegates who feel their mathematics is a little rusty are encouraged to attend our pre-course Maths primer (see page 7) prior to commencing the CQF. This programme is offered to CQF delegates at no extra cost.

Q. How long is the course?
A. The CQF is a six-month program based around 32 compulsory formal lectures held Monday/Wednesday from 6pm to 8:30 pm, London time.

Q. How do I apply?
A. If you wish to apply for a place on the CQF program, please contact cqf@7city.com to request your application form. Class sizes are restricted and places are awarded on a first-come, first-served basis, provided a delegate’s application has been approved and the maths entry test has been completed successfully.

Q. What happens if a delegate is unable to complete the CQF in 6 months?
A. The majority of delegates complete the CQF in 6 months. However it is possible for delegates to defer their completion of the CQF to the next programme. Delegates have up to 3 years to complete the course.

Q. What happens if a delegate fails an exam?
A. If a delegate is struggling with a module they are encouraged to contact us as soon as possible so that a member of the CQF faculty can give them extra help and support.
   If a delegate fails one of the modules a member of the CQF faculty will meet the delegate and review their position. On the basis of this meeting they will then recommend the delegate either retakes the examination or defers to the next programme using this extra time to revise the relevant topics.

Q. Can I get help with funding?
A. We offer the Wilmott Scholarships and Pacific American Foundation Scholarships, which provide funds to enable individuals who are currently not in full-time employment to attend the Certificate in Quantitative Finance. This award will be made at the discretion of the Scholarships Committee, to outstanding candidates who meet the scholarship requirements and who, in the opinion of the committee, is deserving and will gain the most from the program.

Q. What equipment do I need to view the webcast?
A. To view the webcast live or recorded, you will need a computer with a sound card and a speaker. You will also need broadband internet access.

Q. Can I access a CQF class recording to view how the program is delivered?
A. Yes, you can view one of the CQF recordings by going to our website www.7city.com/cqf and click on one of the available webcast on the bottom left corner.

Q. How long will I have access to the recorded lectures?
A. Delegates have access to the recorded lectures in perpetuity.

Q. How long will it take to receive a decision on my application?
A. We endeavour to make a decision within 48 hours of a complete application being received.

Q. When does the course start?
A. The course is delivered twice a year, commencing in January and in June.

Q. Is it possible to complete selected modules?
A. The CQF is designed to be taken as one complete and inter-dependent programme. It is not possible to take individual modules independent of the programme.
Where to find us:
The CQF is delivered in our state-of-the-art training center in London. It employs a combination of natural light, a bright environment and modern technology to allow our tutors to concentrate all their energy on their delegates. Complimentary internet facilities, the financial press and CNN, Bloomberg and CNBC broadcasts are available in our London training center so our delegates can keep an eye on the markets and stay in touch with the office. Disabled access can be arranged whenever necessary.

Contact us:
Admissions
4 Chiswell Street London EC1Y 4UP
Tel +44 (0)20 7496 8652
Fax +44 (0)20 7496 8607
Email cqf@7city.com

Open Evenings

<table>
<thead>
<tr>
<th>2007</th>
<th>2008</th>
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<tr>
<td>London</td>
<td>20th September</td>
</tr>
<tr>
<td>New York</td>
<td>30th October</td>
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<tr>
<td>Boston</td>
<td>1st November</td>
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<tr>
<td>London</td>
<td>15th November</td>
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<tr>
<td>Chicago</td>
<td>28th November</td>
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<tr>
<td>San Francisco</td>
<td>29th November</td>
</tr>
<tr>
<td>London</td>
<td>11th December</td>
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To book your place email: cqfopenday@7city.com

Warren Manners

Previous Degrees:
BS Math/Econ, MA Econ, MAS Actuarial Science, FSA, CFA

Current Position:
Retail Annuity Market Risk Management Dept, ING

“I am an actuary and CFA and have been active in the investment arena for a few years now, mostly pertaining to dynamic hedging of embedded guarantees in insurance/annuity products. Despite all this there was still plenty the CQF had to offer. A fresh new perspective on familiar concepts as well as details about topics I had only heard of but never had the opportunity to use in practice: copulas and finite difference models for example. The presenters do a good job of explaining ideas at the conceptual level, boiling things down to what matters most and explaining on both a rational and mathematical basis. What’s really nice is they model up a lot of the concepts they talk about right in class and then give you access to those Excel models, which are very transparent and bring concepts down to a practical level. Strong guest speakers such as Espen Haug and Peter Jäckel provide insightful, alternative viewpoints.”
Continuing Professional Development Accreditation

7city Learning, an Approved Provider of CFA Institute CPD courses, is now able to offer the CQF towards members’ annual Personal Development requirements. The CQF has been assigned 40 CPD points – the maximum number available under the CFA Institute’s scheme.

Exemptions

**PRMIA Exemptions**

The Education and Standards Committee of PRMIA (Professional Risk Managers Association) has granted all CQF holders exemptions to the PRM qualification for:

- Exam I – Finance Theory, Financial Instruments and Markets
- Exam II – Mathematical Foundations of Risk Measurement

In order to receive the PRM qualification, delegates obtaining the CQF are required to complete a cross-over exam encompassing:

- Exam III – Risk Management Practices
- Exam IV – Case Studies & PRMIA Standards of Best Practice, Conduct and Ethics, Bylaws
The Certificate in Quantitative Finance (CQF)

- Fastest-growing Quantitative Finance program in the world
- Six-month part-time program
- 32 straight-to-the-point lectures
- Classroom or Distance Learning
- All classroom sessions are recorded so delegates have the option of studying in their own time
- All modules are supported by programming workshops
- Delivered every six months by leading academics and practitioners and led by Dr Paul Wilmott
- Provides an in-depth coverage of practical quantitative methods for today’s financial markets
- CQF Alumni benefit from a rapidly expanding continuing professional development program
- Includes an additional 25 lectures in C++ in financial programming, Maths Primer, Lifelong Learning, membership of the CQF Alumni, all materials and books, and access to recordings in perpetuity
- CQF Open Evenings are held regularly in all major financial centers of the world

www.7city.com/quants

t: +44 (0)20 7496 8600   e: cqf@7city.com