

**Quantitative Finance &
Insurance**

May 10th 2016

Let's start from the end...

What you can become from QF&I

The professional profiles of the QFI graduated are:

- Financial analyst, expert in structured finance «*from inside*»
- Actuary

Where you can get from QF&I

- Financial Institutions
- Banks
- Financial and insurance brokers
- Consultancy companies
- Independent consultants
- Insurance companies

Previous placements

- Positions at the following Companies:

Eurizon Asset Management Milano, Fiat Finance and Trade London, Ersel Torino, Fondaco SGR Torino, Fondiaria SAI Torino, Intesa Sanpaolo, J.P. Morgan Hedge Fund Services Dublin, Reale Mutua Assicurazioni, Assicurazioni Generali, Ernst&Young, Mc Kinsey, Kpmg, Price Waterhouse, Swiss R.E, Federal Reserve Bank (USA), RGA.

- Admission to top international Masters and Ph.D. programmes:

Berkeley Haas Business School, Imperial College London, London Business School, Swiss Finance Institute and HEC Lausanne, University College London, University of Pennsylvania, University of California at Los Angeles, Carnegie Mellon Pittsburg, University of Arizona.

The Gallery of our Alumni



More pictures and positions will be published soon on our CampusNet Web site

What is an Actuary, from:

<http://financecareers.about.com/od/insurance/a/actuaries.htm>

An actuary is a highly trained statistician with expertise in evaluating various types of risks. Roughly 60% of actuaries are employed by [insurance](#) companies, and play a key role in setting the terms and conditions of insurance policies, including premium rates. An actuary also has career opportunities in pension fund management, forecasting future payouts and determining current contributions and investment policies in light of them. Additionally, actuaries (either in-house or consultants) help companies in all industries design and implement policies and procedures to mitigate risks in various aspects of their operations.

Actuary: expected competencies

Education: An actuary is expected to have at least a bachelor's degree. There is prescribed coursework in statistics or actuarial science (a branch of applied statistics), plus business, finance and economics. A high degree of computer literacy is increasingly important, especially with regards to software packages commonly used for database and statistical analysis. An MBA can be a useful credential, depending on the firm.

What an actuary is expected to do

Duties and Responsibilities: The job of actuary involves detailed analysis of data to quantify risks. It also requires expertise with advanced modeling techniques to forecast future probabilities of various outcomes, such as losses or claims and their expected magnitudes. While technical expertise and quantitative skills are a must, advancement is dependent, to a great degree, on the ability to communicate effectively with managers who lack this background.

Last but not least

- Domestic insurance companies are anxious to hire good actuaries
- Also Italian banks and financial companies risk conscious like to hire young risk engineers
- You can become also a professional independent actuary passing a National exam and subscribe to *Ordine Nazionale degli Attuari* <http://www.ordineattuari.it/>

To reach Heaven you have to pass through purgatory

In other words, what is the cost?

A challenging 2 years program, where students can choose one out of two slightly different curricula, reported in the next slides

Finance		
semester	Academic year I	CFU
I	SECS-S/06 Mathematics for Finance	12
I	SECS-S/01 Numerical and Stat Methods for Finance	12
II	SECS-P/01 Asset Pricing and Portfolio Choice	9
II	SECS-P/05 Econometric II	12
II	SECS - P/11 BANKING	9
I	SECS-P/09 Corporate Finance	6
	Additional IT Training	3
	First year Subtotal	63
	Academic year II	
I	SECS-S/06 Derivatives	9
I	SECS-P/01 Fixed Income	6
I	IUS/04 Commercial Law (Advanced)	6
II	SECS-P/01 Economics of Savings and Pensions	6
I,II	Electives	12
	Final Examination	18
	Second year Subtotal	57
	Total	120

Insurance and Statistics		
semester	Academic year I	CFU
I	SECS-S/06 Mathematics for Finance	12
I	SECS-S/01 Numerical and Stat Methods for Finance	12
II	SECS-P/01 Asset Pricing and Portfolio Choice	9
I	SECS-S/06 Mathematics for Insurance	6
II	SECS - P/11 BANKING	9
I,II	SECS-P/01 Economics of Savings and Pensions or SECS-S/06 Mathematical Economics or SECS-S/06 Decisions and Uncertainty or SECS-S/01 Statistics II	6
	Additional IT Training	3
	First year Subtotal	57
Academic year II		
I	SECS-S/06 Derivatives	9
I	SECS-S/06 Fixed Income	6
I	IUS/04 Commercial Law (Advanced)	6
I	SECS-S/06 Life and Non life Insurance Techniques	12
I,II	Electives	12
	Final Examination	18
	Second year Subtotal	63
	Total	120

Finance			Insurance and Statistics		
semester	Academic year I	CFU	semester	Academic year I	CFU
I	SECS-S/06 Mathematics for Finance	12	I	SECS-S/06 Mathematics for Finance	12
I	SECS-S/01 Numerical and Stat Methods for Finance	12	I	SECS-S/01 Numerical and Stat Methods for Finance	12
II	SECS-P/01 Asset Pricing and Portfolio Choice	9	II	SECS-P/01 Asset Pricing and Portfolio Choice	9
II	SECS-P/05 Econometric II	12	I	SECS-S/06 Mathematics for Insurance	6
II	SECS - P/11 BANKING	9	II	SECS - P/11 BANKING	9
I	SECS-P/09 Corporate Finance	6	I,II	SECS-P/01 Economics of Savings and Pensions or SECS-S/06 Mathematical Economics or SECS-S/06 Decisions and Uncertainty or SECS-S/01 Statistics II	6
	Additional IT Training	3		Additional IT Training	3
	First year Subtotal	63		First year Subtotal	57
Academic year II			Academic year II		
I	SECS-S/06 Derivatives	9	I	SECS-S/06 Derivatives	9
I	SECS-P/01 Fixed Income	6	I	SECS-S/06 Fixed Income	6
I	IUS/04 Commercial Law (Advanced)	6	I	IUS/04 Commercial Law (Advanced)	6
II	SECS-P/01 Economics of Savings and Pensions	6	I	SECS-S/06 Life and Non life Insurance Techniques	12
I,II	Electives	12	I,II	Electives	12
	Final Examination	18		Final Examination	18
	Second year Subtotal	57		Second year Subtotal	63
	Total	120		Total	120

Exam Sessions

There is a time for classes and a time for exams. Students are supposed to pass the exams as soon as possible, if they want to be competitive in the labor market, so the faculty has decided to provide 4 exam sessions for year, the first two after the semester in which the course has been held and the other two in the the remaining calendar periods. Such decision could be unpopular, but has been carefully evaluated.

Admission Requirements

- Credits requirements:
 - 18 Math
 - 12 Statistics
 - 18 Economics & Accounting
 - **L18 or L33 Classes satisfy the credits requirements “by definition”**
- Undergraduate degree $\geq 99/110$
- English fluency: $\geq 26/30$ or B2

Requirements not met

Credits requirements and/or undergraduate degree < 99/110 and/or English (un)fluency : interview on weaknesses, **only for applications submitted by July 31.**

Deadlines

- Step 1 Application
- Step 2 Assessment by the Committee posted on the website
- Step 3 Interview if some requirements are missing (**Applications submitted before July 31**)
- Step 4 Enrollment
- Step 5 Classes

Deadlines

Step 1*	Step 2	Step 3
by April 30	by May 10	by May 20
By June 15	by June 23	by July 8
By July 31	by September 6	by September 10
By September 5	by September 9	**
By November 30	by December 10	**

Requirements not met: a remark

Next applications (let's call them "late applications") will be examined taking into account also the curriculum, but, when the degree is **far below 99, there are no chances at all.**

How to apply

Follow **carefully** the instructions you can find at:

<http://www.finance-insurance.unito.it/do/home.pl>

The screenshot shows the website interface for the Department of Quantitative Finance and Insurance at the University of Turin. The page is titled "Dipartimento di Scienze Economico-Sociali e Matematico-Statistiche Quantitative Finance and Insurance". The navigation menu includes "Home", "Presentation", and "More Info". The main content area features a grid of icons representing various services and resources, including "EDUCATIONAL GOAL", "PROFESSIONAL PROFILES", "PROGRAM DESCRIPTION", "FACULTY", "HOW TO APPLY", "JOB PLACEMENT- INTERNSHIPS", "CONTINUING STUDIES", "INTERNATIONAL MOBILITY", "FACILITIES-OPENING HOURS", "MOODLE", and "ITALIAN VERSION". A prominent orange banner at the bottom of the grid reads "Short course on Math and Probability" and states: "Before the official start of classes there will be a short course on Mathematics and Probability. All students are warmly recommended to participate. You can find attached the presentation and a draft of the program." Below the banner is a link for "Attachment (21.2 KB)". The right sidebar contains information about the Department and the School of Management and Economics.

How to apply

Carefully means:

- Fill your online application form
- Write your whole address
- Attach **all** the files required
- Check the website to read the Committee's report on admissions

Files required

- Official University transcript
- Curriculum vitae
- English certificate
- Copy of the identification document
- Reference letters (optional, see below)
- Others (optional, see below)

After the Committee's Report

In any case, read carefully the document **Reference background**, that is for all participants, even though admitted without interview, if you intend to get the greatest benefit from the program. Next A.Y. A short introductory course on Math and Probability will be offered before classes to remind you more specifically «what you are supposed to know»

To explicit the requirements...

Next A.Y. a short introductory **course on Math and Probability** will be offered before classes to remind you more specifically «what you are supposed to know»: don't miss it!!!

When admitted

- You can enroll in the period
august – december

Calendar:

September 6-16: Short course on Math and Probability

September 19: Official classes start

Basic References

- **Financial Mathematics** Samuel A. Broverman, *Mathematics of Investment and Credit* ACTEX
- **Microeconomics** Robert. S. Pindyck Daniel L. Rubinfeld, *Microeconomics*
- **Mathematics** A. Chiang, *Fundamental Methods of Mathematical Economics*, McGraw-Hill
- **Probability** Sheldon M. Ross, *A First Course in Probability*, Prentice Hall
- **Statistics** T.H. Wonnacott, R.J. Wonnacott, *Introductory Statistics*, John Wiley & Sons
- **Capital Markets** Z. Bodie, A. Kane, A.J. Marcus, *Investments*, McGraw-Hill
- **Accounting** P. Kimmel, J. Weygandt, D. Kieso, *Financial Accounting: Tools for Business Decision Making*, John Wiley & Sons