

EISTI



Ecole
Internationale
des Sciences
du Traitement
de l'Information

MASTER in QUANTITATIVE FINANCE & RISK MANAGEMENT

The EISTI, an engineering school with two tracks in Applied Mathematics and Computer Science, offers an international Master's Degree in "Quantitative Finance and Risk Management", taught in English.



**Cergy-Pontoise,
near Paris**

This Master draws on the recognized excellence of our engineering school in quantitative finance, and makes great use of the collaborations with the Universities of Paris-Dauphine and Cergy-Pontoise. In this, the EISTI is one of the very few engineering schools able to provide such an educational service in its own name, as a "Master's" degree is traditionally reserved for Universities.

The Master is going to appeal to international students, or for high-potential foreign engineers who are looking for an international career in the domain of finance.



OBJECTIVE

This Master's degree covers the whole chain of quantitative finance, from theoretical aspects to the application in a professional setting. The chain can be described as follows:

- Description of the market and financial products
- Mathematical finance models
- Mathematical risk models
- Numerical resolution: computer-aided simulation
- Calibration and asset evaluation

SPECIFIC DETAILS OF THE MASTER

- The Master came from the Financial Engineering option (IFI), taught at the EISTI for the last 13 years (all students from the option have found work as soon as their compulsory internships finished, and have an average salary 20% higher than the norm in this sector).
- The Master is intrinsically international
- The theoretical content of the Master is very thorough, covering everything you need to know in the associated professions. As a consequence, the students are very adaptable within the work market.
- The Master offers a 3-skilled approach, in Computer Science, Mathematics and Finance.

BLOOMBERG

A Bloomberg trading room with 16 terminals is provided in order to prepare our students to be immediately operational in the financial institutions.

All Master's students are equipped with a laptop for the duration of the program that remains the property of the EISTI.

TEACHING

All the classes will be taught in English except:

- FLE (French as a foreign language), where the objective is to teach the students how to understand and express themselves in French.
- Cultural Openness, where the objective is to enrich the students' knowledge of French culture.

E-LEARNING AREA

The EISTI offers an e-learning site to all its students, which complements everything the students will learn through their presence and participation in class:

- Class documents, practical work and tutorials online
- Questions and discussions between teachers and students, and among students
- A possibility of handing work in online



M1, FROM SEPTEMBER TO JUNE

SKILLS	SUBJECTS	HOURS	ECTS
Mathematics	Measure and integration	20	2
	Functional Analysis	30	3
	Stochastic Processes-Discrete/Continuous Time	55	5,5
	Optimization	25	2,5
	Jump Processes and Application	30	3
	Partial Differential Equations	30	3
Calibration, Simulation, & Numerical analysis	Monte Carlo Simulations	30	3
	Finite Difference Computation	25	2,5
	Calibration of Financial Models	20	2
	Bloomberg trading room	30	3
	C++ and Object Oriented Design	20	2
	VBA Programming	30	3
	Interdisciplinary Project	50	5
Finance and Insurance	Introduction to Quantitative Finance	25	3
	Risk Management in a mono-period Financial Market, Derivatives	40	4
	Contingent Claims Valuation	30	3
	Portfolio Management and Financial Risks	30	3
	Mathematics Applied to Insurance	30	3
FLE	French as Foreign Language / Cultural Openness	96	4,5
TOTAL M1		646	60

M2, SEPTEMBER TO SEPTEMBER (INTERNSHIP INCLUDED)

SKILLS	SUBJECTS	HOURS	ECTS
Mathematics	Mathematical Tools in Finance	54	4,5
	Mathematical Statistics	21	2
Calibration, Simulation, and Numerical analysis	Advanced Numerical Methods for PDE in Finance	30	2,5
	Advanced Spreadsheet Programming	24	2
	Simulation	24	2
	Calibration	30	3
Theoretical and Practical Finance	Theory of Contingent Claims	54	4,5
	Interest Rate, Exchange and Inflation Markets	30	2,5
	Portfolio Management	30	2,5
	Imperfect Markets	20	2
	Dynamic Hedging and Risk Measures	21	2
	Business Evaluation	35	2,5
	Jump Processes and Applications	21	2
	Careers and financial products	30	2
	Practical Fixed Income Management	24	2
FLE	French as Foreign Language / Cultural Openness	72	4
Master's Thesis	Master's Thesis	150	9
TOTAL CLASSES	Total M2 Classes and Master's Thesis	670	51
Internship	Internship from mid-April	22 weeks	9
TOTAL M2			60

ENTRY REQUIREMENTS

This international program is for any student holding a Bachelor of Science or equivalent, in applied mathematics, or a related discipline. Other qualifications may be accepted, provided there is evidence of sufficient relevant work experience.

Depending on the profile, students will be admitted either in M1 or directly in M2.

English language requirements

For non native English speakers, the candidates will need to provide evidence of their English language ability with their application form. We accept:

- **TOEFL (Test of English as a Foreign Language):**

Internet based test - minimum score of 80

TUITION FEES

The overall cost of this master for the two years is €14,000 (€7,000 per year).

SCHOLARSHIP

Excellence and Honor scholarship are available for high profile students.

ENROLLMENT

The enrollment is done on a rolling basis. Dossier to be downloaded on our website and sent to EISTI.



JOB OPPORTUNITIES

Derivatives Engineer, Quantitative Market Analyst, Quantitative Portfolio Manager, Quantitative Risk Manager, Control and Performance, IT Tools Designer, Actuary, Trader (sell, buy, equities, commodities).

WHICH TYPES OF ENTERPRISES?

Banks, Insurance, Stock Market, Fortune Management, Industry, Internet Financial Services, Hedge-Funds.

CONTACTS

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Visit our website :
eisti.fr/en