

- Faculté des sciences économiques
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Risk Management (5AF2026)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en finance, orientation analyse financière (avant 2013)	Cours: 4 ph	cont. continu	6
Master en statistique	Cours: 4 ph	cont. continu	6

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante:

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Olympia Capital Management
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Objectifs:

The purpose of the course is to provide a comprehensive presentation of the measurement and applications of Risk Management in the financial industry. The first part of the course is devoted to probability theory, statistical analysis, and Monte-Carlo simulations. The second part of the course is devoted to the core of Risk Management, namely Value at Risk (VaR). A formal definition of VaR is presented, the statistical concepts that underlie the measurement of VaR are discussed and the methods to compute VaR for linear as well as non-linear instruments are introduced. It also offers a presentation of Stress Testing which is a complement to traditional probability-based VaR methods. The last part of the course tackles an increasingly important topic: the quantitative measurement of credit risk.

Contenu:

1. Chapter 1: Probability theory and quantitative analysis
2. Chapter 2: Capital markets and financial products
3. Chapter 3: Value at Risk as a tool for market risk management
4. Chapter 4: Credit risk management.

Problem sets:

Students will have to solve four to five problem sets that will be corrected in class by the teaching assistant. These problem sets will be practical implementations of the theoretical concepts that are introduced during the lectures. Even if they can be solved on Excel, it is highly recommended to use a statistical/econometric package such as Matlab to solve them.

Forme de l'évaluation:

2-hour (open book) written exam during the last lecture of the semester: 60% of the final evaluation.
Problem sets to be solved by groups of three students: 40% of the final evaluation.
Re-take exam (September): 2-hour written exam (100%).

Documentation:

- Philippe Jorion, 2002, Value at Risk 2nd edition, McGraw-Hill.
- Philippe Jorion, 2005, Financial Risk Manager Handbook, Wiley Finance.
- Murray R. Spiegel, Johan Schiller and R. Alu Srinivasan, 2004, Understanding Market, Credit, and Operational Risk: The Value at Risk Approach, Blackwell Publishing.
- Arnaud de Servigny and Olivier Renault, 2004, Measuring and Managing Credit Risk, Mc Graw-Hill.
- John Hull, Options, Futures and Other Derivatives, Pearson.

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Forme de l'enseignement:

Lectures: 4 hours per week.