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Derivatives (5AF2002)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en finance	**Cours: 4 ph**	**Voir ci-dessous**	6

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

Période d'enseignement:

- Semestre Printemps

Contenu

This course provides an introduction to derivatives on the master level. We will cover in detail:

- Introduction to derivatives
- Responsible usage of derivatives
- Trading strategies
- Pricing of forwards and futures
- Pricing of swaps
- Distribution-independent properties of options
- Pricing of options using the binomial model
- Wiener processes and Ito's Lemma
- The Black-Scholes formula
- Greeks
- Structured products

The course is structured into lectures, exercises, excel tutorials, case studies, and a guest lecture.

Forme de l'évaluation

Evaluation organised during the semester and final exam during the exam session at the end of the semester.

No connected devices are permitted during the final exam. In case of violation of these rules, the students are in a situation of fraud and the unauthorized items will be removed. The exam could be deemed as failed.

Modalités de rattrapage

Retake exam: 2-hour written exam (100%) during the exam session.

No connected devices are permitted during the retake exam. In case of violation of these rules, the students are in a situation of fraud and the unauthorized items will be removed. The exam could be deemed as failed.

Documentation

The main textbooks are:

Hull, John C. (2014): Options, Futures, and Other Derivatives, 9th Edition, Pearson.
McDonald, Robert L. (2013): Derivatives Markets, 3rd Edition, Pearson.

Pré-requis

Mandatory courses of the M.Sc. Finance program in the 1st semester; good knowledge in mathematics and probability theory.

Forme de l'enseignement

Lectures, exercises, excel tutorials, case studies, and a guest lecture: 4 hours per week.

Objectifs d'apprentissage

Au terme de la formation l'étudiant-e doit être capable de :

- Analyse the price behaviour of forwards, futures, swaps, and options

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- Calculate the price of a derivative with the help of a statistical software programme
- Identify trading strategies associated with derivatives
- Compute the fair value of a derivative

Compétences transférables

- Discuss the implications of your findings with your professor
- Prepare the solution of a case study related to derivative markets
- Present the solution of a case study in a small team in front of your classmates