



# Faculté des sciences appliquées

**FSA**

INMA2472 **OPERATIONS RESEARCH: ADVANCED LINEAR PROGRAMMING**

[30h+22.5h exercises] 5 credits

This two-yearly course is taught in 2004-2005, 2006-2007,...

This course is taught in the 1st semester

**Teacher(s):** Yves Smeers  
**Language:** french  
**Level:** 2nd cycle course

## Aims

In depth study of the different facets of a particular problem of linear programming, spanning modelling, numerical and economic aspects as well as practical applications.

## Main themes

The course concentrates on portfolio management models and linear programming approaches to the pricing of financial derivative

## Content and teaching methods

The initial portfolio management problem by quadratic programming

Alternative formulation of risk criteria currently adopted in practice (VaR): modelling, economic and numerical aspects

Alternative models of (coherent) risk criteria, economic and numerical properties, modelling through linear programming; current acceptability of these new methods in practice

Modelling of the derivative pricing problem through linear programming

## Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Students must have a background in linear programming. The rest of the course is self-contained.

## Other credits in programs

**INGE23/G** Troisième Ingénieur de gestion (Générale)  
**INGE23/I** Troisième Ingénieur de gestion (Internationale)