



MTH 645S: Optimization Methods for Mathematical Finance

CLASS: TUTH 3:30PM - 4:45PM

Textbook: The course is based on *Optimization Methods in Finance* by Gerard Cornuejols and Reha Tütüncü; i will integrate it with further material, especially in the Linear Programming part. The software used is AMPL, which students are strongly encouraged to download and learn; a manual is freely available at <http://www.math.miami.edu/~bruno/AMPLbook.pdf>.

Content: The tentative outline is

- Linear programming for finance: 5 weeks
- Non-linear programming for finance: 5 weeks
- Remaining weeks: A glimpse at integer programming.

Grading policy:

- Three exams (two midterms and one final). The final will be either written, or in the form of a short seminar. Makeups will be given only in case of documented medical excuse.
- Homework and exercises, typically proposed weekly, are not compulsory but recommended as preparation for the exam.
- Cooperation in homework is allowed. If you hand in a homework resulting from cooperation, please indicate it clearly on top (e.g. “Solved exercise 2 with Luigi & exercise 3 with Mario”).
- Class participation and homework play an important role in determining final grades, especially in borderline cases.

General rules:

- It is up to students to know what has been covered in class or not, and which exercises have been assigned. Please do not email the professor(s) with requests to repeat it.
- During class, cell phones tablets and computers should be put away. (Plenty of studies show that students learn better if they take notes.) Questions and feedback are always welcome.
- Presence at office hours is not compulsory, but recommended. Showing up by the dozen the day before the test is not efficient; please consider coming by when you have the first doubts, and plan ahead.
- Tests are designed to cover precisely the material explained in class. If you wish, you may bring one page with formulas at each exam.
- The usual UM honor code rules apply.

Remarks:

We won't have classes in the September 17 week, I'm at a conference. (We'll make up for it during the course.)

With this, I wish you a lovely Fall semester here at The U!

Bruno Benedetti
Assistant Professor