

# STAT 598W

## Design & Analysis of Financial Algorithms

SPRING 2007. Classroom and time: W 3.30-6.20pm in MTHW 301.

Frederi Viens, Associate Professor of Statistics and Mathematics.

Email: viens@purdue.edu

TA: Alexandra Chronopoulou

Email: achronop@purdue.edu

Office: MATH G130

Course Webpage: [www.stat.purdue.edu/~achronop/STAT598W](http://www.stat.purdue.edu/~achronop/STAT598W)

### Course Description

The present trend of the financial industry expects financial mathematicians and quantitative analysts to be proficient in understanding, coding and implementing financial algorithms. This course aims to teach the students coding in different programming environments.

### Homework Assignments

There will be homework problems on a weekly basis. Solutions will be discussed on the next class. The homework problems should be done individually and identical solutions will not be acceptable. The homework will be graded just for completion, BUT IN-CLASS PARTICIPATION AS WELL AS ATTENDANCE will be taken into account and will be a portion of the grade.

### Project

The students are required to turn in a final project by the Friday of finals week. The project will be done in groups of 4 at most. The topic should be chosen by the students and should be taken from a research paper. As this is a computational course, coding is required. Preferrably the project will consist of the implementation of a computationally challenging financial algorithm. The week after spring break all the groups should have been formed and a topic should have been chosen.

## Grading Scheme

The grade will consist of the in-class participation, attendance, homework assignments and final project.

## Outline

The students will work on the following languages, not necessarily in this order:

- MATLAB
- EXCEL VBA
- C++
- XTAPI (X-TRADER)

The class will meet once a week for about 2 hours. The meeting will have two parts. On the first part, homework solutions will be discussed. On the second part, an invited speaker proficient on a specific language/software (or one of the students who is an "expert" in a language) will present how to use the programming language or software. Tips will be given for the weekly homework assignments.