FE 621 Computational Methods in Finance

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The main goal of a student enrolled in FE621 is to obtain essential computational tools used in the industry by modern financial quantitative analysts. The students are to become familiar with such methods as regression, time series analysis, decision methods, and simulation. They are to learn to apply the results to forecasting, including asset pricing, hedging, portfolio and risk assessment, investment strategies, and other financial problems. Students must have a strong mathematical background and be familiar with derivatives terminology and concepts at the level of Hull's textbook.

Each section of the course will cover theory and test the student's knowledge on developing models.

Required material

(a) Textbook 1: *Implementing Derivatives Models*, by Clewlow and Strickland, Wiley, 1998. ISBN: 0471966517

(b) Textbook 2: *Options, Futures and Other Derivatives*, by John C. Hull, Prentice Hall, 2005, ISBN: 01314-9908-4.

(c) Assignments require knowledge of one of the following programming languages: C++/C#, Java. You could probably use Matlab or R as well.

(d) An activated Stevens computer account.

Grades

The final grade will be determined upon the student's performance in the Homework assignments. We may have a final project that will count toward the final grade, however due to the nature of the online course this may prove impracticable and I may cancel it. More details to follow.

Late assignments will not be accepted under any circumstances without prior notice and permission of the instructor. If outside circumstances are affecting your ability to perform in the course, you must contact me <u>before</u> you fall behind.

Webcourse Communication

Please email me only within the WebCt mail system. Do not use my normal email address unless in exceptional cases when response is needed immediately. Usually response should be received in 24 hours.

Students are encouraged to post questions in the discussion group/forum. In general this encourages students to exchange ideas, view points on issues related to homeworks and projects. Active participators will be awarded bonus points decided by instructor.

We will have a regular audio meeting class on Interwise every week, the exact time to be determined. In addition students are welcome to participate in online live chatting every Wednesday 2:30pm-3:30pm. If no student shows up in the first 15 minutes, the chatting room will be closed for that day.

Course Proceedings

Each week I will post in advance the material that we are going to discuss on the Interwise communication site. Students will have to read the chapters in advance before participating in the audio lecture. Student participation is encouraged and rewarded.