Prerequisites
The class is open to students capable of independent reading in quantitative finance. This is not a course for students with no previous background in the field. Students should have some familiarity with Black-Scholes theory and the general methods of quantitative finance, either from self-study and work experience, or from the first semester or two of a financial mathematics, financial engineering or business program. The accent in the course will be on the financial modeling ideas in some classic and some new papers, but most of these papers will involve some mathematics.

Students from diverse programs, whether in the Ph.D program or the graduate students in Financial Engineering, in business or in math, are encouraged to participate in the course.

Course Objectives

E4708 - Topics in Financial Engineering Spring 2010 will cover "Important Papers in Quantitative Finance." This year some part of the course will concentrate on papers related to the ongoing financial and economic crisis.

The course is intended for students with enough experience to read an interesting paper on financial engineering or quantitative finance and then present its contents to the class. You don't have to be an expert but you have to be willing to learn how to read a research paper, and then contribute.

Students will work in small groups that will take responsibility for reading and reporting on a paper that the entire class has read, and then leading a discussion on the topic. This is a good way to cover many topics that regular classes don't cover.

Students will gain experience in learning to make presentations that get across the point of the research and its results as well as the details of mathematics. This should be helpful for job interviews and general communication skills. We will critique each other's presentations.

A list of possible topics and related papers that we can choose from at the first class is presented at the end of this document. Feel free to suggest your own topics at the first class meeting.

Method of Instruction
We will select about 10 topics, some classic and some recent, all with interesting ideas in quantitative finance, and then study them together as a class. In each class two or three students in a group will be jointly responsible for reporting on one paper to the rest of the class, and then leading a class discussion. The students reporting on the paper may circulate questions for the class to think about a few days before the presentation. The rest of the class will have read the papers too, and so be able to contribute to and participate in the discussion.
Method of Evaluation
The final grade will be based on the student's presentation to the class and/or a term paper related to the papers covered by the group.
It will be the responsibility of the students, with advice from the instructor, to figure out a suitable topic. The idea will be to explain the topic in an intelligent and clear fashion, accentuating both the ideas, the theory and the mathematics.

While the project is a group effort, about 10% of the grade will depend upon class participation as individuals.

Presentation Skills
One of the things we want to focus on in this course, in addition to the financial topics, is how to make presentations. Students should put effort into both understanding the material and explaining it clearly, and discussants should comment on this too. In the financial industry the ability to explain complex subjects clearly is very important.

You should have easy-to-read slides that explain where you are headed, what you are trying to show, what its importance is.