Albert-Ludwigs-Universität Freiburg
Institut zur Erforschung der Wirtschaftlichen Entwicklung

Hands-On Approach in Computational Finance

Outline:

In March 2012 we provide a training course in Computational Finance. This intensive training is an introduction to Computational Finance that will primary focus on the basic numerical methods for pricing financial derivatives, such as options. The main goal of the course is to provide the participants with the tools necessary to implement some of the most important financial models by means of software widely used in the industry.

The course will consist of three parts.

I. The first part will be devoted to an introduction to the basic tools of working with Octave such as the use of a graphical user environment, introduction of various numerical operations and plotting facilities offered by the software.

II. The second part will be divided into theory and practical work. The theoretical session will include an overview of several program examples. The focus will be on familiarizing the students with basic programming concepts. The other session will be fully devoted to independent work by the students on an assignment.

III. Finally during the concluding session, we will present a possible solution of the assignment. In addition, students will have an opportunity to discuss and present the problems they have encountered while working on the assignment.

Software Used in the Course:

MATLAB is an interactive programming environment widely used for the purpose of numerical computation and visualization of data. It is heavily used by professionals in the financial services industry as well as in academia in the field of asset pricing, risk management etc. It is highly suitable for the purpose of market data graphical representation, solving optimization problems, modeling interest rates, and performing Monte Carlo simulations. Octave is an open-source alternative to MATLAB which provides a similar graphical user interface and its syntax is compatible with MATLAB. Therefore, we organize the computer lab training in Octave.

Instructor:

JProf. Dr. Eva Lütkebohmert-Holtz and Daria Lavrentev, Research Group Financial Mathematics, Institute for Research in Economic Evolution

Prerequisites:

Basic knowledge about option pricing is assumed for those students who want to take part in the training. We highly recommend this course to the students who have participated in “Principles of Finance” and “Futures and Options” since the training is an excellent supplementary to those theoretical courses.

Participants:

This course is primarily intended for students in the second year of the master program, as preparation for their work on the master thesis. The course will, however, be open to everyone who is interested. Due to the limited capacity of the PC pool pre registration is required. Applications for the seminar including grade transcript can be send to Daria Lavrentev until February 29th 2012 (daria.lavrentev@vwl.uni-freiburg.de). The slots will be assigned on a first-come first-served basis, while students in their last year of study will have priority.

Course Schedule:

March 2012. The exact dates and location will be announced shortly on our web page.

Additional Information:

http://www.prim.uni-freiburg.de/lehre