

## **SAMPLE SYLLABUS: CONTENTS COULD BE SUBJECT CHANGE**

APS 1002 Financial Engineering  
Summer May 16-30, 2011

Instructor: Roy Kwon

Location: MB128

Time: 4:30-7:30PM

Course description: This course provides an introduction to financial engineering concepts especially relevant for engineering students. The major topics include the theory of interest, applied interest rate analysis, fixed-income securities e.g. bonds, basic derivative securities e.g. options, portfolio (mean-variance) optimization theory (including practical engineering issues), the capital asset pricing model, and introduction to options and option pricing.

Prerequisites: Basic background in probability and statistics and optimization. No previous finance background is assumed. Also, students will be expected to use optimization software packages such as in Excel, MATLAB, or Lindo.

Required Textbook: Investment Science by David Luenberger, Oxford University Press.

Requirements: Two exams (some questions will involve some optimization computation) First exam will be on Friday May 20th in class from 4:30PM-7:30PM. The second exam will be on May 30 Monday (Time and place TBA). Optional homework will be assigned daily but not collected. However, the exams will be very similar to the homework problems.

Relevant Chapters in the text: Chapters 1,2,3,4,5,6,7,8,10, and parts of 10 and 11. There will also be a handout for option pricing.