

Financial Modeling – Blended Learning Format

Class 1 Overview of Financial Modeling (in person)

Discussion Topics: Philosophy of Learning: Class organization, objectives, and philosophy; Learning Styles; The Role of Modeling in Contemporary Finance; Visual Basic programming

Sidebar: Market for MBAs with financial modeling skills

Read Before Class: Benninga: Chapter 1

In Class Assessment: Learning Styles Inventory

In Class Case: Models in Corporate Finance

Homework Problems: 1-1 through 1-14 (Note: Use the workbook provided on the CD – these worksheets show how the problems are set up. Sometimes you have to alter the spreadsheet to find the solution. These problems should improve your understanding of the chapter material – we will have a quiz on these calculations.)

In Class Exercise: Visual Basic programming (continued on your own after class)

In Class Quiz: Basic financial calculations in Excel

Learning Objectives: philosophy of learning and teaching, overview of financial modeling, review of corporate finance

Learning Outcomes: understand the major philosophical and practical issues confronting financial models, introduction to VB programming

Class 2 Corporate Finance – Cost of Capital (students work on their own after a one hour class session)

Discussion Topics: Alternate models of the cost of capital

Read Before Class: Benninga: Chapter 2

In Class Cases: Computing the Cost of Capital for Kraft

Case Due: VBA Project – Submit your VBA project workbook via the assignment function in Blackboard before the beginning of class.

Learning Objectives: using financial information to analyze the cost of capital

Learning Outcomes: strategic insights to be gained from alternative cost of capital models

Class 3 Corporate Finance – Financial Statement Modeling (students work on their own after a thirty minute class session)

Discussion Topics: Financial statements from a finance perspective

Read Before Class: Benninga: Chapters 3 and 4

Case Due: Kraft's Cost of Capital – Submit your cost of capital workbook model via the assignment function in Blackboard before the beginning of class.

In Class Case: PPG's Financial Model

Learning Objectives: financial statement modeling, *pro forma* forecasts, free cash flows, return on equity

Learning Outcomes: understand how to model financial statements to aid strategic planning and forecasting

Class 4 Investments – Mean-Variance Portfolio Models
(students work on their own after a one hour class session)

Discussion Topics: Markowitz-Sharpe Portfolio Models

Read Before Class: Benninga: Chapters 8, 9, 10 and 12 (skim) and Portfolio Models (this reading replaces the Benninga chapters, although you'll want to be familiar with those chapters as a reference)

Case Due: PPG's Financial Model. Submit your workbook model via the assignment function in Blackboard before the beginning of class.

In Class Exercise: Portfolio Models

Learning Objectives: quantitative portfolio management techniques; strengths and weaknesses; efficient markets

Learning Outcomes: understand how to apply quantitative portfolio management techniques to stocks, bonds and alternative assets

Class 5 Investments – Black-Litterman Models (students work on their own after a thirty minute class session)

Discussion Topics: Black-Litterman portfolio models

Read Before Class: Benninga: Chapter 13

Case Due: Mean-Variance Portfolio Models. Submit your Portfolio Model workbook via the assignment function in Blackboard before the beginning of class.

Learning Objectives: alternative quantitative portfolio management techniques; strengths and weaknesses; extracting implicit weights

Learning Outcomes: understand how to apply alternative quantitative portfolio management techniques to stocks, bonds and alternative assets; comparison with traditional models

Class 6 Value-at-Risk (students work on their own after a one hour class session)

Discussion Topics: Historical Monte Carlo-based VAR models

Read Before Class: Benninga: Chapter 15

Case Due: Black-Litterman Portfolio Model. Submit your Portfolio Model workbook via the assignment function in Blackboard before the beginning of class.

In Class Case: Portfolio VAR

Learning Objectives: basics of value-at-risk analysis

Learning Outcomes: understand the pros and cons of VAR; understand the practical application of alternative VAR methods

Class 7 Option Pricing (three hour presentation and discussion)

Discussion Topics: Binomial option pricing models

Read Before Class: Benninga: Chapter 16, 17 (My advice is to read 16.1 through 16.5.2 and skim the rest of Chapter 16. After reading this material you should be able to value a European put and call options at expiration.) Then read Modeling Options.

Class Presentation: Option Pricing Theory and Practice

Case Due: Portfolio VaR Model. Submit your VaR workbook via the assignment function in Blackboard before the beginning of class.

Learning Objectives: option pricing; binomial models; implement a binomial option pricing model

Learning Outcomes: understand the basics of options; how and when to use binomial pricing models

Class 8 Option Pricing (students work on their own)

Discussion Topics: Black-Scholes option pricing models

Read Before Class: Benninga: Chapters 18, 19, and 20 (skim) Modeling Options should be enough to get you through the assignments.

Case Assignment Due: Modeling Options. Submit your workbook model via the assignment function in Blackboard before the beginning of class.

Learning Objectives: Black-Scholes models; building a Black-Scholes user-defined function in Excel

Learning Outcomes: compare and contrast binomial and Black-Scholes models

Class 9 Bonds – Part I (two hour class meeting after which students work on their own)

Discussion Topics: Duration and immunization strategies; term structure models

Read Before Class: Benninga: Chapter 25, 26, 27; Duration: A Practitioner's View, Bob Koppasch, *Journal of Applied Finance*, Fall 2006 p. 138 (available on Blackboard)

Homework Problem: Problem 25-7, 27-3, 27-4

In Class Case: Modeling immunization strategies and term structures: A Better Mousetrap

Learning Objectives: bond price dynamics; term structures, market predictions

Learning Outcomes: be able to model an immunization strategy; understand basic term structure models

Class 10 Bonds – Part II (one hour class meeting followed by students completing assigned model on their own)

Discussion Topics: Bond options

Reading Assignment: Fabozzi, Chapter 14, Analysis of Bonds with Embedded Options, Valuing Bond Options

Case Assignment Due: Do Forward Rates Predict Future Spot Rates?. Submit your workbook model via the assignment function in Blackboard before the beginning of class.

Learning Objectives: bond option basics; conforming models to the term structure

Learning Outcomes: strengths and weaknesses of bond default models; risk partitioning

Class 11 Swaps (one hour class meeting followed by students completing assigned model on their own)

Discussion Topics: Swaps and swap pricing; swap curves as an alternative to government bond yield curves

Reading Assignment: Using the Lattice Model to Value Forward Start Swaps and Swaptions by Gerald W. Buetow and Frank J. Fabozzi

Case Assignment Due: Bond Option Pricing Models. Submit your workbook model via the assignment function in Blackboard before the beginning of class.

Learning Objectives: swap analysis and pricing models

Learning Outcomes: strengths and weaknesses of swap models; swap spreads and swap curves

Class 12 Review

Case Assignment Due: Swap Models. Submit your workbook model via the assignment function in Blackboard before the beginning of class.