

**UNIVERSITY OF SOUTH CAROLINA
MOORE SCHOOL OF BUSINESS**

**FINA 766: ADVANCED REAL ESTATE VALUATION
SPRING 2010**

Instructor: Professor Yongqiang Chu
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Office Hours: By appointment (email to set up time)

Course Website: <http://blackboard.sc.edu/>

Course Description

This is a capstone course on advanced topics in real estate finance. Real estate continues to be integrated into the broader financial markets, which themselves continue to become increasingly sophisticated. The result is that real estate students need exposure to the tools, techniques, culture, and institutions of high finance. During the semester you will learn how to apply advanced financial economic concepts and techniques to improve your understanding of markets and your business decision-making skills.

The course is broken into three parts: 1) Quantitative Tools 2) Mortgage And Mortgage Valuation 3) Mortgage-Backed Securities. Lectures will address the relevant topic areas and develop methodological skills. Assignments and case studies will be used to reinforce learning of material presented in class.

Required Course Reading Material and Other Course Requirements

Text: 1. Options, Futures and Other Derivative, 7e, by John Hull
2. Mortgage-Backed Securities-Products, Structuring and Analytical Techniques

You should also buy the two Harvard Business Cases below

Readings: Additional required readings will be posted on blackboard

Additional supplemental discussion readings will be provided as needed during the semester.

Readings are meant to complement classroom lecture material. Lectures sometimes directly reference the assigned readings, and sometimes do not. You should try to complete the relevant readings in advance of the lecture.

Lecture notes are available on the course website.

Course Prerequisites

FINA 767 or FINA 467. Intermediate Courses in Fixed Income Securities (FINA740) and Derivatives (FINA 750) are helpful.

Course Policies

No late assignments are accepted, unless cleared in advance with the instructor. Because there are no exams in this class, it is very important that you do your own work. Any assigned work that is an exact copy or essentially a duplicate of other work will automatically receive a zero.

Case studies will be completed in groups of two to four.

Course Expectations

- Attend class
- Come to class on time, and do not leave during class
- Read and think about readings/cases before attending class
- Participate and ask thoughtful questions (but don't dominate the discussion)
- Be professional at all times

Course Grading

Problem Assignments (4)	60%
Case Studies (2)	20%
Class Participation	<u>20%</u>
	100%

Written solutions to problem assignments should be thoroughly explained and logical. Leaving a paper trail is essential so that your solution logic can be followed.

Case studies are group projects, and all group members will receive the same grade. You will receive additional instruction on how to do case studies in general and how to complete each specific case study.

Class participation is an important component to your overall grade, and can make the difference between getting an A or a B (or something less). Students are encouraged to actively participate (and behave appropriately) in class. This means contributing to class discussions by speaking in class,

actively and constructively contributing to case study preparation, and possibly presenting a case for class discussion purposes.

Class Project and Homework Assignment Topics and Dates

Problem Assignment #1: Options

Date Assigned: 1/21

Date Due: 2/2

Problem Assignment #2: Mortgage Valuation

Date Assigned: 2/9

Date Due: 2/18

Problem Assignment #3: Mortgage Valuation

Date Assigned: 3/2

Date Due: 3/16

Problem Assignment #4: CMBS Valuation

Date Assigned: 3/25

Date Due: 4/6

Case Study #1: Rosetree Mortgage Opportunity Fund (HBS 9-209-088)

Date Assigned: 2/23

Date Due: 4/1

Case Study #2: Traveler Mortgage Securities CMON (HBS 9-286-061)

Date Assigned: 3/4

Date Due: 4/8

Assignments and cases will be returned about one week after submission, and grades will be posted on blackboard. It is your responsibilities to figure out any discrepancies between the grades on returned assignments and on blackboard. Please let me any discrepancies no later than two weeks after I return your assignments.

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Date Lec # Lecture Topic and Readings

1/12 T 1 Course Introduction and Overview

Part I: Tools

1/14 TH 2 Financial Derivatives: Basic Ideas, The Underlying Asset

- Hull, "Options, Futures, and Other Derivative Securities," pp. 1-15, 190-204.

1/19 T 3 Financial Derivatives: Call and Put Options, Black-Scholes-Merton Option Pricing

- Hull, "Options, Futures, and Other Derivative Securities," pp. 151-167, 173-187, 207-228.

1/21 TH 4 Financial Derivatives: Binomial Approach to Option Pricing

- Hull, "Options, Futures, and Other Derivative Securities," pp. 217-218, 335-342.

Part II Mortgage Markets

1/26 T 5 Overview of the Mortgage Market

- FBB, "Mortgage-Backed Securities," Chapter 1

1/28 TH 6 Measurement of Prepayments and Defaults

- FBB, "Mortgage-Backed Securities," Chapter 3

2/2 T 7 Prepayment Behavior and Performance

- FBB, "Mortgage-Backed Securities," Chapter 4

2/4 TH 8 Valuation of Callable Mortgage Debt

- Geltner and Miller, "Commercial Real Estate Analysis and Investments," pp. 419-432.
- Fabozzi, *Handbook of Mortgage-Backed Securities*, 1988, pp. 605-637, 667-786.
- Swartz and Torous, "Prepayment and the Valuation of Mortgage-Backed Securities," *Journal of Finance*, 1989, pp. 375-392.

2/9 T 9 Valuation of Defaultable Mortgage Debt

- Titman and Torous, “Valuing Commercial Mortgages: An Empirical Investigation of the Contingent-Claims Approach to Pricing Risky Debt,” *Journal of Finance*, 1989, pp. 345-373.

Part III Mortgage-Backed Securities

2/11 TH 10 Overview of the Mortgage-Backed Securities Market

- FBB, “Mortgage-Backed Securities,” Chapter 2

2/16 T 11 Structuring Techniques: Division of Principal

- FBB, “Mortgage-Backed Securities,” Chapter 5,6

2/18 TH 12 Structuring Techniques: Division of Interest

- FBB, “Mortgage-Backed Securities,” Chapter 7

2/23 T 13 Structuring Private Label CMOs

- FBB, “Mortgage-Backed Securities,” Chapter 8

2/25 TH 14 Techniques for Valuing MBS

- FBB, “Mortgage-Backed Securities,” Chapter 10

3/2 T 15 Measuring MBS Interest Rate Risk

- FBB, “Mortgage-Backed Securities,” Chapter 11

3/4 TH 16 Evaluating Senior MBS and CMOs

- FBB, “Mortgage-Backed Securities,” Chapter 12

- 3/16 T 17 Structured Financial Products: CMBS Market Development, Market Structure, and Security Structure I
- Fabozzi, *The Handbook of Mortgage-Backed Securities*, 6th Edition, pp. 1119-1132
 - Lehman Brothers, “CMBS Outlook 2008,” December, 2007.
 - Citigroup Global Markets, “2008 CMBS Market Outlook,” December 2007.
- 3/18 TH 18 The Impact of Structuring on CMBS Bond Class Performance
- Fabozzi, *The Handbook of Mortgage-Backed Securities*, 6th Edition, pp. 1133-1156.
- 3/23 T 19 CMBS Collateral Performance: Measures and Valuations
- Fabozzi, *The Handbook of Mortgage-Backed Securities*, 6th Edition, pp. 1187-1198
- 3/25 TH 20 Rating of CMBS
- Fabozzi, *The Handbook of Commercial Mortgage-Backed Securities*, 1st Edition, pp. 179-236
- 3/30 T 21 Structured Financial Products: Dynamic Approach to Pricing CMBS Structured Financial Products
- Fabozzi and Jacob, *The Handbook of Commercial Mortgage-Backed Securities*, 1st Edition, pp. 319-348.
 - Childs, Ott, Riddiough, “*The Pricing of Multi-Class Commercial Mortgage-Backed Securities*,” *Journal of Financial and Quantitative Analysis*, 1996, pp. 581-603.
- 4/1 TH 22 Discussion of Case 1
- 4/6 T 23 MBS Market-An Outlook
- 4/8 TH 24 Discussion of Case 2