

University of Pennsylvania  
The Wharton School

**Real Estate Finance: Investment and Analysis**  
**Fall 2011**  
**REAL/FNCE 721 – JMHH G50**

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***Course Objectives:***

There are two primary goals of this class:

- 1) To expose you to the terms, issues, and topics in commercial real estate;
- 2) To give you the basic skills and intuition you need to begin to evaluate a variety of real estate investments.

Real estate is a multi-faceted field, encompassing both an operating industry and a broad category of investments. It has its own institutional features, jargon, and investment structures. As the survey course in the Real Estate Department, this class aims to provide a broad overview of the real estate field, rather than a narrow focus on any particular topic. We delve more deeply into a handful of aspects of the real estate field when I believe they are particularly relevant or when the example provides a more general insight. Higher-level classes in the Real Estate Department examine in more detail many of the topics from this class.

*The presumption in this class is that you have no prior real estate experience, and no pre-existing knowledge of the real estate industry is necessary to do well in this class.* However, if you have prior experience in the real estate industry, some topics might be familiar to you already.

***Course Materials:***

- The required **textbook** is *Real Estate Finance and Investments, Third Edition*, by Linneman. It is available in the Bookstore. In my opinion, the Linneman book is the best one available. However, I have made two alternative texts, *Commercial Real Estate Analysis and Investments* by Geltner and Miller and *Real Estate Finance and Investments* by Brueggman and Fisher, as well as two supplemental books, *Investing in REITs* (Block) and *A Primer on Securitization* (Kendall and Fishman), available on reserve at Lippincott. In addition, these books are available new or used at Internet bookstores. You may find them useful as supplemental resources or for additional background and context.
- Copies of the PowerPoint slides used in class are posted in PDF format on Canvas. I have posted the current versions of the semester's slides so you can see what I plan to cover. However, I often update and modify the slides closer to class time, so you should

plan to print out the most current version in advance of class. These slides are a woefully inadequate substitute for attending class. Rather, they are intended to be a tool to aid in taking notes.

- Readings, available at Study.net, fall into two categories:
  - (a) Required readings
  - (b) Recommended (but optional) readings
- Additional **handouts** will be distributed in class and billed by the bursar. I will bring handouts to class only once. After that, extra copies will be available outside my office door. You can pick them up there or, if I can convert them to electronic format, you will be able to download them from Canvas.
- On **Canvas** you will find:
  - Copies of the PowerPoint slides used in class (in PDF format)
  - Sample Excel spreadsheets from the in-class examples
  - Practice problems, old exams, and solutions
  - Supplemental class material, such as newspaper articles
  - Announcements, updates, and clarifications
  - Answers to questions that are of general interest (e.g., about a case)
- You must have a **financial calculator** capable of computing annuities and present values. The calculator you were supposed to obtain for FNCE 601 will be more than adequate. You are also responsible for knowing how to use the annuity and present value functions. You will need the calculator for the exams.

### *Class Preparation:*

- **Required readings** are listed on the syllabus with an asterisk (\*) and are in bold print. They are drawn from the textbook and the readings bulkpack. You should read them before the class in which they are listed. I encourage you to do the recommended (but optional) readings that are listed on the syllabus, especially if you are a real estate major. These readings either expand upon or reinforce the topics we cover in class, but are not required for the class and typically will not be referenced in any depth in lecture.
- **Practice problems** and **old exams** will be made available on Canvas, along with detailed solutions. Doing them is a fundamental part of learning the material. In addition, the exams test the class concepts in a format similar to the practice problems. Please do the practice problems after the topic set in which they are covered. (For example, do Practice Problems set #9 after we cover Topic #9.) I will neither ask you to hand in the problem sets nor grade them. This is not an indication that I consider them unimportant. Rather, I have found that it is self-evident to students that doing the problem sets on their own is a wise idea.

### *Guest Speakers:*

**Guest speakers** are scheduled outside of normal class time, and are listed on the syllabus. These sessions are **required** material. I will try to videotape them for students who have a conflict with another class. However, some speakers prefer not to be videotaped and you will need to get the notes from someone else if you are unable to attend. The guest lectures are:

- Monday, September 15, 4:30-6:00 p.m. Sam Zell, JMHH G06.
- Tuesday, October 4, 6:00-7:20 p.m. Reid Liffmann (Angelo, Gordon)
- Tuesday, November 15, 6:00-7:20 p.m., Mark Myers (Wells Fargo)

**Cases:**

There will be three group project cases handed out in class. You will choose your own group of three to five members, and must work with the same team on all three cases. Your group may contain members from any of my sections of 721. It is your responsibility to find a group. You and your teammates should sign up under the “team sign-up” section on Canvas.

The cases require a variety of skills, from financial savvy to management. You should try to have a mix of talents and backgrounds on your team. In addition, I strongly encourage you *not* to take the “divide and conquer” approach of having only one or two team members work on each case. You will be much more successful if the group uses a truly collaborative process.

*You may discuss the cases with other groups and give and receive assistance. However, each group must separately prepare their own case materials and write-ups. **Late cases will not be accepted nor will extensions be given.***

You must attend class on case discussion days. See the “Grading” section for penalties.

**Examinations:**

Two midterm exams will be held in regularly scheduled class time, one on Wednesday, October 19 and the other on Wednesday, December 7. Exam 2 is not cumulative in content, but assumes proficiency in basic skills taught in the first portion of the class. Exams will cover the material examined in class and during guest lectures, the class notes, the cases, the practice problems, and the required readings. The exams are closed-book, but you are allowed to bring one 8.5 x 11” piece of paper (double-sided) of notes into each exam. You will need to bring a financial calculator to the exams. You will not be allowed to use a computer. In addition, seats will be randomly assigned on exam days.

**Both exams must be passed in order to receive a passing grade for the course. Exams must be taken at the assigned time. If you cannot attend class on these dates, please drop the class now. Make-ups are not given unless you have a Wharton Dean’s Office-approved excuse. For a medical excuse, you must have been **admitted for treatment** by student health services or the hospital, or have a doctor’s note explaining that you were incapacitated. Being seen is not enough.**

**Grading:**

The course grade will be based on the following: Exams: 50 percent (25 percent each); Cases: 50 percent (16.7 percent each). Failure to attend class on a case discussion day will result in a 10 percent reduction in your grade for that case. (I will grant excuses for extenuating conflicts if given advance notice, but no more than one per student per semester.) Beyond that, I will not explicitly grade your attendance in the class, but I will consider superb or sub-par class participation when deciding grades. This factor could account for up to one-third of a letter grade.

My policy on regrades is posted on Web Cafe.

**Course Expectations:**

- I expect you to be prepared for class. That means: having completed the *required* readings in advance of the lecture and being ready to comment on or discuss the class material.
- I expect you to be willing to participate in class discussions, and to speak up if you're bewildered.
- I expect you to be physically present for the talks by outside speakers unless you have a conflict with another class.
- I expect that you will not find every topic we cover to be of interest to you, but that you will be a good sport about it. Students who are considering a career in real estate development, for example, are interested in very different things than students who are considering a career on Wall Street. All the topics we will cover are of interest to someone in the class, but few are of interest to everyone. Please recognize that your classmates and you do not necessarily share the same tastes when I go into depth on a topic that you feel is not especially relevant to you.

**Other policies:**

- You may not use computers, PDAs, Treos, Blackberries, etc., unless medically necessary. (I apologize if you truly like to take notes on a laptop computer, but past abuses have forced me to this policy.)
- Students must attend the course section in which they are officially enrolled. If you have an unavoidable conflict, check with me (by email) well in advance of the class.
- **Whatever seat you choose on the *third* class meeting (September 14) is yours for the entire semester.** Please sit there every class.
- During exams, I will randomly assign new seats.
- Please display name tents.
- The class schedule is an ambitious goal and may not reflect the actual timing, or even sequence, of covering material.
- Be aware that it is the policy of the Real Estate Department that MBA students who take the class pass/fail cannot count the course toward the four credits necessary to complete the real estate concentration.

**Getting help:**

- Contact me. Do not think that a question is too "basic" to ask me. I am happy to help students understand any material they are having difficulty with. All I ask is that you take a serious stab at it yourself before turning to me. I hold regular office hours, take appointments, and answer questions by email.

## Course Schedule

Date	Topic	Preparation
1. September 7	Topic #1: Course requirements, class overview, and overview of real estate markets	<i>Emerging Trends in Real Estate 2011</i> , chapters 1-2. Linneman, chapter 2: "What Is Real Estate?", pp. 12-35.
2. September 12	Topic #2: Property-level income; sources, risk, and value	* <b>Linneman, chapter 4</b> : "Property Level Pro Forma Analysis", pp. 43-55. * <b>Linneman, chapter 5</b> : "Financial Modeling" * <b>Linneman, chapter 7</b> : "The Use and Selection of Cap Rates" Linneman, "Prerequisite I: The Basics of Discounted Cash Flow and Net Present Value Analyses" Linneman, "Prerequisite II: IRR: What It Is and What It Isn't" Brealey and Myers, <i>Principles of Corporate Finance</i> , chapter 3: "How to Calculate Present Values."
3. September 14	Topic #2: Property-level income; sources, risk, and value, continued	
4. September 15	Special Thursday class, 4:30-6:00 p.m. Sam Zell. "Real Estate Markets and the Economy – Domestically and Globally." JMHH G06.	
5. September 19	Topic #3: Debt financing and simple mortgages	* <b>Linneman, chapter 4</b> : "Property Level Pro Forma Analysis", pp. 56-58. * <b>Linneman, chapter 13</b> : "The Use of Debt and Mortgages" Linneman, chapter 11: "Real Estate Bankruptcy Basics" Linneman, chapter 12: "Should You Borrow?" Linneman, "Prerequisite III: Amortization Fundamentals"
6. September 21	Topic #4: Appraisals and Evaluating Pro Formas <b>Case #1 handed out</b>	* <b>BP #1</b> : <i>Nine Abuses Common in Pro Forma Cash Flow Projections</i> * <b>Linneman, chapter 8</b> : "Development Pro Forma Analysis" OPT #1: <i>How Reliable Are Commercial Appraisals? Another Look</i>
7. September 26	Topic #5: Taxes and Real Estate	* <b>Linneman, chapter 4</b> : "Property Level Pro Forma Analysis", pp. 55-56, 59-63. * <b>Linneman, chapter 16</b> : "Real Estate Exit Strategies."
8. September 28	Topic #6: Introduction to leases and the economics of retail malls	* <b>Linneman, chapter 3</b> : "The Fundamentals of Commercial Leases." OPT #3: <i>Mall Myths</i> OPT #4: <i>The Changing Design of Shopping Places</i> OPT #5: <i>The Evolution of Retailing in the United States</i>

9. October 3	Topic #7: Debt structures and managing real estate risk	<b>First part of Case #1 due before 10 a.m. No discussion.</b> *BP #2: <i>Guide to Real Estate Capital Markets: Participating Debt and Equity</i> . [This article is a bit dry. Do your best to wade through, and don't worry about the "Parameters" sections.] *Linneman, Chapter 15: "Ground Leases as a Source of Finance."
10. October 4	<b>Special evening class:</b> 6:00-7:20 p.m. Reid Liffmann (Angelo, Gordon & Co).	
11. October 5	Topic #7: Debt structures and managing real estate risk, continued. Hand out midterm exam review sheet	*Linneman, chapter 17: "Real Estate Private Equity Funds" OPT #2: <i>Real Estate Private Equity Funds</i>
October 10	<b>NO CLASS, Fall break</b>	
October 12	<b>NO CLASS, Zell-Lurie meeting</b>	
12. October 17	Case #1 discussion	<b>Remainder of Case #1 due by October 17, 10 a.m.</b>
13. October 19	<b>Midterm Exam 1</b>	
14. October 24	Topic #8: Real estate cycles. <b>Case #2 handed out.</b>	*BP #3: <i>Adjustment Mechanisms in Real Estate Markets</i> Linneman, chapter 20: "Real Estate Cycles" Linneman, chapter 9: "Development Feasibility Analysis" OPT #6: <i>Superstar Cities</i> OPT #7: <i>Will We Need More Office Space?</i> OPT #8: <i>Living Downtown</i> OPT #9: <i>Developer: Villain or Hero?</i> OPT #10: <i>(When) Will We Do It Again?</i>
15. October 26	Topic #9: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	*BP #4: <i>How to Build a Bond</i> *Linneman, chapter 14: "Commercial Mortgage Backed Securities Basics" Linneman, "Supplemental II: A Look at a Real CMBS Issue"
16. October 31	Topic #9: Securitization of Debt Interests: Commercial Mortgage-Backed Securities, continued	*BP #5: <i>Defaults in Securitized Real Estate Loans</i> OPT #11: <i>The Mortgage REITs: Dynamos or Duds?</i>
17. November 2	Topic #10: Equity securitization and the REIT market	*BP #6: <i>Basic Valuation of a Real Estate Investment Trust</i> *Linneman, chapter 18: "REITs and Liquid Real Estate" OPT #12: <i>REIT Share Prices and the Declining Relative Importance of Commercial Real Estate</i> OPT #13: <i>Liquid Real Estate</i> OPT #14: <i>REITs as an Alternative Investment in Volatile Financial Markets</i>
18. November 7	<b>Case #2 discussion</b>	<b>Case #2 due before 10 a.m., November 7</b>

19. November 9	Topic #10: Equity securitization and the REIT market, continued. <b>Case #3 handed out</b>	* <b>Linneman, chapter 10:</b> “Real Estate Company Analysis.” * <b>BP #7:</b> <i>UPREITs: A Vehicle for Tax Deferral and Asset Growth</i> * <b>BP #8:</b> <i>Real Estate: Past, Present, and Future</i> * <b>BP #9:</b> <i>Inside the Revolution</i> * <b>BP #10:</b> <i>Forces Changing the Real Estate Industry Forever</i> * <b>Linneman, Chapter 18 Supplement A:</b> <i>The Forces Changing Real Estate Forever: Five Years Later</i> * <b>BP #11:</b> <i>The Five Overlooked Features of the Real Estate Capital Markets</i> * <b>BP#12:</b> <i>The Pressure on Public REITs to Grow Larger</i> OPT #15: <i>REITs and Taxes</i>
20. November 15	<b>Special evening class:</b> 6:00-7:20 p.m. Mark Myers (Wells Fargo).	
21. November 16	Topic #11: Return and Risk in Housing Markets (with a parallel to commercial real estate)	OPT #16: <i>Assessing High House Prices: Bubbles, Fundamentals, and Misperceptions</i>
22. November 21	Topic #11: Return and Risk in Housing Markets (with a parallel to commercial real estate)	
November 23	<b>NO CLASS:</b> <i>pre-Thanksgiving Day</i>	
23. November 28	Topic #12: The rent/own decision in residential and corporate real estate. Hand out midterm exam review sheet.	* <b>Linneman, chapter 19:</b> “Corporate Real Estate Decision Making”
24. November 30	<b>Case #3 discussion</b>	<b>Case #3 due before 10 a.m., November 30.</b>
25. December 5	Cover remaining material. Midterm exam review.	
26. December 7	<b>Midterm Exam 2</b>	