

University of Pennsylvania  
The Wharton School

**Real Estate Finance: Investment and Analysis**  
**Spring 2017**  
**REAL/FNCE 721**

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**Course Objectives:**

- 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. 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:**

**Textbook:** *Real Estate Finance and Investments, Fourth Edition*, by Linneman is required. It is available in the Bookstore. In my opinion, the Linneman book is the best one available. However, two good supplemental texts are *Commercial Real Estate Analysis and Investments* by Geltner, Miller, Clayton, and Eicholtz and *Real Estate Finance and Investments* by Bruggeman and Fisher. Other interesting supplemental readings are *Investing in REITs* (Block) and *A Primer on Securitization* (Kendall and Fishman).

**Class notes:** Copies of the PowerPoint slides used in class will be posted in advance of class time. Even if the slides are posted well in advance, I often update and modify them a day or two before class, so you should plan to print out or download the most current version shortly before class. These slides are not designed to be a substitute for attending class.

**Readings:** Additional required readings are available at Study.net.

**Calculator:** You must have a financial calculator capable of computing annuities and present values. You are also responsible for knowing how to use the annuity and present value functions. You will need the calculator for the exams.

**Handouts:** Occasional handouts will be distributed in class. 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 they are also available digitally, you will be able to download them from Canvas.

### **Class Preparation:**

**Required readings:** These readings are listed on the syllabus with an asterisk (\*) and are in bold print. They are drawn from the textbook and the readings bulkpack on study.net. You should read them in advance of the class in which they are listed.

**Optional readings:** For interested students, especially real estate majors, I will provide additional recommended (but optional) readings. These readings either expand upon or reinforce the topics we cover in class.

**Practice problems:** A set of practice problems and detailed solutions will be available on Canvas. Doing these problems is a fundamental part of the class. 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.

**Old exams:** Old exams will be available on Canvas. I encourage you to do these, timed and without looking at the solutions, in advance of the midterms.

### **Guest Speakers:**

Guest speakers are scheduled outside of normal class time. These sessions are **required** material. These lectures are not videotaped so the guests feel comfortable speaking freely. You will need to get the notes from someone else if you are unable to attend. The guest lectures are:

- February 6, 6-7:30pm: Sara Doelger, Vice President, Argosy Real Estate
- March 14, 6-7:30pm: Alfonso Munk, Managing Director and Chief Investments Officer, Prudential Real Estate Investors
- April 4, 6-7:30pm: Jay Mantz, President, Rialto Capital Management

### **Cases:**

**Workload:** There will be three group projects.

**Distribution:** Cases will be handed out in class. They will not be available electronically.

**Teams:** You will choose your own case team 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 team. 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 more successful if the group uses a truly collaborative process.

**Independent work:** 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.

**Due dates:** Cases will always be due before 9 a.m. on the day the case is discussed in class. **Late cases will not be accepted nor will extensions be given.**

### Examinations:

**Workload:** Two midterm exams will be held in regularly scheduled class time. You must take the exam during your section time – no switching sections will be permitted.

- Monday, February 27th
- Wednesday, April 26th

**Material covered:** Exams will cover the material examined in class and during guest lectures, the class notes, the cases, the practice problems, and the required readings. Exam 2 is not cumulative in content, but assumes proficiency in basic skills taught in the first portion of the class.

**What you can bring in:** 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 both exams. You will not be allowed to use a computer.

**Exam seating:** Seats will be randomly assigned on exam days.

**Passing the exams:** Both exams must be passed in order to receive a passing grade for the course.

**Exam makeups:** Exams must be taken at the assigned time. ***If you know in advance that you will not be able to attend class on the exam dates, do not take this class.*** 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:

**Weights:** The course grade will be based on the following:

- Exams: 50 percent (25 percent each); you must pass each individually
- Cases: 50 percent (16.67 percent each).

**Attendance:** 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.

**Curve:** Each individual assignment is curved by section and the variance is standardized so no one assignment contributes more variance to your final grade than another. The curved scores are totaled for each student and the total is curved again within section. In practice, this means that your grade is determined by how many standard deviations your assignment scores are above or below your section's mean and whether you have

correlated over- or underperformance across assignments.

**Regrades:** My policy on regrades is appended to the syllabus.

**Seating:**

**Seating property rights:** Whatever seat you choose on the *second* class meeting (January 18) is yours for the entire semester. We will hold it for you until class starts. Please sit there every class. However, if you are late for class, your seat may be taken by someone switching in.

**Switching sections:** I understand that sometimes conflicts arise and I believe it is better to attend some class than no class. However, my experience has been that I need to exercise some crowd control. So:

- **No switching sections on exam days.**
- Also, in general, please do not switch sections unless you have an unavoidable conflict.
- If you have a conflict and must switch sections, wait by the side of the room until a couple of minutes after the start of class. At that point, you may take any open seat.
- I reserve the right to change this policy and limit students to attending the section they are enrolled in.
- This policy is not intended to let students sign up for one section and regularly attend another. Frequent switching is abuse of this policy and I reserve the right to ask for proof of any class conflict.

**Classroom Expectations:**

**Be on time:** I will start on time and end on time. Do not arrive late.

**Electronics:** You may not use computers, smartphones, Blackberries, etc., unless medically necessary. I will ask you to put the device away. You may use an iPad or other flat tablet to read and annotate the class notes.

**Name tents:** I appreciate it if you display your name tents.

**Be prepared:** Completed the *required* readings in advance of the lecture and be ready to comment on or discuss the class material.

**Participation:** Be willing to participate in class discussions, and to speak up if you're bewildered.

**Guest speakers:** Be physically present for the talks by outside speakers unless you have a conflict with another class.

**Good sport:** 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.

**Getting help:**

**Canvas:** I rely on Canvas to communicate with you and provide class materials:

- Copies of the PowerPoint slides used in class
- 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
- Discussion threads for Q+A (e.g., about a case)

**Email:** 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. The Canvas discussion threads are also a good place to ask questions.

**Office hours:** I hold regular office hours Tuesdays from 2:00-3:30pm. Sign up on Canvas. If you can't make that time, email me and we'll schedule an appointment.

**Disclaimers:**

**Schedule:** The class schedule is an ambitious goal and may not reflect the actual timing, or even sequence, of covering material.

**Pass/fail:** 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 five credits necessary to complete the real estate concentration.

## Tentative Course Schedule

Date	Topic	Preparation
1. January 11	Topic #1: Course requirements, class overview, and overview of real estate markets	<i>Emerging Trends in Real Estate</i> , <b>chapters 1-2</b> . (available on Canvas) Linneman, chapter 2: "What Is Real Estate?"
January 16	No class – MLK Day	
2. January 18	Topic #2: Elements of real estate value: income and expenses; pro-forma setup <b>Choose your seats today! (Get to class early.)</b>	* <b>Linneman, chapter 4:</b> "Property Level Pro Forma Analysis," <b>pp. 43-55</b> . * <b>Linneman, chapter 5:</b> "Financial Modeling" 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"
3. January 23	Topic #2, continued: Cap rates; Property-level risk <b>Case #1 handed out</b>	* <b>Linneman, chapter 7:</b> "The Use and Selection of Cap Rates"
4. January 25	Topic #3: Mortgages	* <b>Linneman, chapter 13:</b> "The Use of Debt and Mortgages" Linneman, "Prerequisite III: Amortization Fundamentals" Brealey and Myers, <i>Principles of Corporate Finance</i> , chapter 3: "How to Calculate Present Values."
5. January 30	Topic #3: Mortgages, continued Topic #4: Evaluating Pro Formas, Part I	* <b>BP #1:</b> <i>Nine Abuses Common in Pro Forma Cash Flow Projection</i> * <b>Linneman, chapter 4:</b> "Property Level Pro Forma Analysis," <b>pp. 56-58</b> .
6. February 1	Topic #4: Evaluating Pro Formas, Part II	* <b>Linneman, chapter 8:</b> "Development Pro Forma Analysis"
February 6	<b>Guest Lecture 6-7:30pm SHDH 350</b>	Sara Doelger (MBA '09), Vice President, Argosy Real Estate
7. February 6	Topic #5: Taxes and Real Estate	* <b>Linneman, chapter 16:</b> "Real Estate Exit Strategies."
8. February 8	Topic #6: Debt financing, land leases, hybrid structures, and partnerships	* <b>Linneman, Chapter 15:</b> "Ground Leases as a Source of Finance." * <b>Linneman, chapter 17:</b> "Real Estate Private Equity Funds"
9. February 13	Topic #6, continued <b>Case #1 Part 1 due before 9 a.m.</b>	Linneman, chapter 11: "Real Estate Bankruptcy Basics"

		Linneman, chapter 12: "Should You Borrow?"
10. February 15	Topic #7: Introduction to leases and the economics of retail malls	*Linneman, chapter 3: "The Fundamentals of Commercial Leases"
11. February 20	Topic #7, continued <b>Case #1 Part 2 due before 9 a.m.</b>	
12. February 22	Topic #8: Real estate cycles	*BP #4: <i>Adjustment Mechanisms in Real Estate Markets</i> Linneman, chapter 20: "Real Estate Cycles" Linneman, chapter 9: "Development Feasibility Analysis"
13. February 27	<b>Midterm Exam 1</b>	
March 1	<i>NO CLASS</i>	
<b>Spring Break</b>		
14. March 13	Topic #9: Equity securitization and the REIT market <b>Case #2 handed out</b>	*BP #2: <i>Basic Valuation of a Real Estate Investment Trust</i> *Linneman, chapter 18: "REITs and Liquid Real Estate"
March 14	<b>Guest Lecture 6-7:30pm SHDH 351</b>	Alfonso Munk (MBA '02) – Managing Director and Chief Investment Officer, Prudential Real Estate Investors
15. March 15	Topic #9: Equity securitization and the REIT market, continued.	*Linneman, chapter 10: "Real Estate Company Analysis" Linneman, chapter 18, <i>Supplements A and B</i>
16. March 20	Topic #10: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	*BP #3: <i>How to Build a Bond</i> *Linneman, chapter 14: "Commercial Mortgage Backed Securities"
17. March 22	Topic #10: Securitization of Debt Interests: Commercial Mortgage-Backed Securities, continued.	Linneman, chapter 14, <i>Supplements A and B</i>
March 27	<i>NO CLASS</i>	
18. March 29	<b>Case #2 discussion</b>	<b>Case #2 due before 9 a.m.</b>
19. April 3	Topic #10: Securitization of Debt Interests: Commercial Mortgage-Backed Securities,	

	continued <b>Case #3 handed out.</b>	
April 4	<b>Guest Lecture 6-7:30pm SHDH 351</b>	Jay Mantz, President, Rialto Capital Management
20. April 5	Topic #11: Housing Markets	
21. April 10	Topic #11: Housing Markets, continued	
22. April 12	Topic #12: The rent/own decision in corporate and residential real estate.	<b>*Linneman, chapter 19:</b> “Corporate Real Estate Decision Making”
23. April 17	<b>Case #3 discussion</b>	<b>Case #3 due before 9 a.m.</b>
24. April 19	Topic #12: The rent/own decision in corporate real estate, continued Midterm review	
April 24	<i>NO CLASS</i>	
25. April 26	<b>Midterm Exam 2</b>	

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### Regrade Policy

I strive for accuracy and equity in the grading for this class. However, despite my best efforts, grading is sometimes imperfect. The following set of rules provides a mechanism for requesting regrades to correct grading errors. If you do not follow these rules, you will forfeit your right to a regrade. The rules are designed to maintain fairness by not rewarding gratuitous regrade requests while also not penalizing students for bringing errors to my attention.

- The onus for bringing any errors to my attention falls upon you. Pick up your assignments promptly so you can check the grading and make sure that your grade on Canvas matches the grade on your assignment.
- If you request a regrade, **the entire assignment will be reviewed**. Errors tend to be random and offset each other. It would be unfair to the rest of the class to correct only the grading errors. Be sure to take the time to make sure you understand the errors you made before submitting the regrade request. If not, you run the risk that you actually did worse than you thought and were too generous with the points given.
- Regrade requests will be accepted for **three weeks following the return of an assignment**. If an assignment has multiple parts, the deadline for a regrade request for any part of the assignment is three weeks after the return of the last part of the assignment.
- The acceptable margin of error on a 100-point assignment is **+/- 2 points**. Please do not submit regrade requests for one or two points total. The exception is if we totaled up your points incorrectly: in that case I will correct any size error.
- If we made an error in adding up your points to obtain your total score, all you need to do is type up a short explanation describing the points we failed to add, attach it to your assignment, and place both in my mailbox in SHDH.
- My intent is that you only lose points once for a mistake. Sometimes, an error in one part of an assignment creates incorrect answers in another part of the assignment. In that case, we look for internal consistency. If your answer would have been correct had you not made your earlier mistake, we will note the mistake but not deduct further points for it. Similarly, if in a case you repeat the same calculation in a number of circumstances, we will deduct points only once for a calculation error but we will try to note it every time. If you believe that we inadvertently deducted points multiple times for the same error, please type up a detailed explanation and submit it along with the assignment to my mailbox in SHDH.
- To aid your understanding of the material and of the grading philosophy, I typically provide an explanation of how the points were allocated. If you believe your grading was not consistent with the stated guidelines, please type up a detailed explanation and submit it along with the assignment to my mailbox in SHDH.
- If you merely would like an explanation of the grading on an assignment, submit your assignment with a typed cover letter letting me know what you would like me to explain. We will set up a time to meet and I will explain it to you.
- **Do not submit regrade requests by email.**