

University of Pennsylvania
The Wharton School

Real Estate Finance: Investment and Analysis
REAL/FNCE 209/721
Fall 2017
TuTh 1030am-12pm (721-406) in JMHH F90
TuTh 130-3pm (209-401), 3-430pm (209-402) in JMHH 350
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Professor Maisy Wong
1464 Steinberg Hall-Dietrich Hall
email: maisy@wharton.upenn.edu

Office Hours: Th, 12-1pm
and by appointment

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 or newer* by Linneman. It is available in the Bookstore. In my opinion, the Linneman book is the best one out there for this course. The third edition is substantially different from the second edition. I recommend purchasing the third edition or newer. However, I have also made *Commercial Real Estate Analysis and Investments* by Geltner and Miller available at the library. Geltner and Miller includes more technical details while the Linneman text assumes you have the technical background and focuses relatively less on the technical aspects.
- There are four articles available from Reprographics and Study.net.
- 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 the Canvas.

- On Canvas you will find:
 - Updates to the class notes, when necessary
 - Sample Excel spreadsheets from the in-class examples
 - Answers to questions that are of general interest (e.g., about a case)
 - Practice problems, old exams, and solutions
 - Supplemental class material
 - Supplemental case materials
 - Announcements, updates, and clarifications
- 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.

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.
- **Guest speakers** are scheduled outside of normal class time, and are listed on the syllabus. These sessions are **required** material. Generally, I do not videotape these lectures so the guests feel comfortable speaking freely. You will need to get the notes from someone else if you are unable to attend. **Attendance is required unless you have a valid conflict.** One regular lecture is canceled for each guest lecture. These may not be in the same week as the guest lecture. The guest lectures for this semester include:
 - *Sam Zell (Equity Group Investments): Mon, Sept 25th, 6pm-7pm, Prince Theater, Annenberg*
 - *Alfonso Munk (PGIM): Tue, Oct 10th, 6pm-720pm, SHDH 350*
 - *Timothy Johnson (Blackstone): Wed, Nov 1st, 6pm-720pm, SHDH 350*
- **Practice problems** and **old exams** will be made available on Canvas, along with detailed solutions. I strongly recommend that you do these. The problem sets are not graded and will not be handed in. But they provide reinforcement for the class material and good preparation for the exams.

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. If you cannot find a group and you email me soon, I will either form a group for you or assign you to different teams over the course of the semester.

You and your teammates should sign up under the “team sign-up” section on Canvas. Students in 721 may form groups only with students in their section. Students in 209 are encouraged to form groups within your own section, but can elect to join members from either section. You are responsible to make the team work. If you think a teammate is not working with good faith, or has neglected to finish her/his share of work, you must try hard to work it out within the group.

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.

Cases are handed out in class. *You may discuss the cases with other groups. However, each group is responsible for preparing the case materials and write-ups independently. **Late cases will not be accepted nor will extensions be given.***

Examinations:

Two midterm exams will be held in regularly scheduled class time, one on October 17th (end of Quarter 1, the Tuesday *after* Fall Break) and the other on December 7th (the last day of class). 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** to student health or the hospital, or have a note explaining that you were incapacitated.

Attendance:

I will start recording attendance on September 5 (Tue). I will rely on Wharton Connect to record attendance. Arriving FIVE or more minutes late for class is treated as an absence and absences will be excused only for the specific reasons listed on the undergraduate/MBA program website (personal illness, personal or family emergency, and religious holidays for observant students).

You can log into SPIKE and enter an explanation if you were marked absent for class erroneously. Please note that absences due to late check-in or forgetfulness cannot be removed or excused, per the guidelines of the school. However, the explanation will be taken into account when evaluating attendance data.

Grading:

The course grade will be based on the following: Exams: 54 percent (27 percent each); Cases: 36 percent (12 percent each); Participation (10 percent). Each of the three sections will be curved separately.

I will consider superb or sub-par class participation when deciding grades. Sub-par participation includes arriving late to or missing classes. The dates and times for all assignments are final, and must be strictly adhered to. Failure to complete any exam or hand in any case on time will result in zero points for that exercise.

Technology:

- I allow the use of tablets to take notes. Screens need to be flat on the table so as not to distract other students. Upright screens are allowed if you sit in the last row.
- Some lectures center around excel spreadsheets. I will notify you in advance if you can bring a computer.
- Phones must be turned off and put away.
- If you have a medical excuse, please inform me before class begins.
- I reserve the right to change the policy concerning the use of technology if it impacts the learning environment. Out of fairness to all students and in adherence to guidelines from the MBA office, course participation points will be deducted for students who violate this policy.

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:

- **Whatever seat you choose on the *second* class meeting is yours for the entire semester.** Please sit there every class.
- During exams, I will randomly assign new seats.
- The class schedule is an ambitious goal and may not reflect the actual timing, or even sequence, of covering material.

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 stab at it yourself before turning to me. I hold regular office hours, take appointments, and answer questions by email.
- There are TA's for the course. They will hold office hours for cases and midterms. These will be announced later. There are three TA's responsible for each case. I will announce them as the cases are handed out.

Course Schedule

Date	Topic	Preparation
Aug 29, T	Topic 1: Course requirements, class overview, and overview of real estate markets	<i>Emerging Trends in Real Estate</i> , chapters 1-2. (Available on Canvas.) Linneman, chapter 2: "What Is Real Estate?"
Aug 31, Th	Topic 2: Property-level income; sources, risk, and value Choose your seats today! (Get to class early.)	* Linneman, chapter 4: "Property Level Pro Forma Analysis", pp. 43-56. * Linneman, chapter 5: "Financial Modeling" * Linneman, chapter 7: "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"
Sept 5, T	Topic 3: Debt financing and simple mortgages	* Linneman, chapter 4: "Property Level Pro Forma Analysis", pp. 56-58. * Linneman, chapter 13: "The Use of Debt and Mortgages" Linneman, chapter 11: "Real Estate Bankruptcy Basics" Linneman, chapter 12: "Should You Borrow?" Linneman, "Prerequisite III: Amortization Fundamentals" Brealey and Myers, <i>Principles of Corporate Finance</i> , chapter 3: "How to Calculate Present Values."
Sept 7, Th	Topic 3: Debt financing and simple mortgages Case 1 handed out in class (no electronic copies available)	
Sept 12, T	Topic 4: Taxes and Real Estate	* Linneman, chapter 4: "Property Level Pro Forma Analysis", pp. 58-63. * Linneman, chapter 16: "Real Estate Exit Strategies." Tax worksheet in class
Sept 14, Th	Topic 4: Taxes and Real Estate	Tax worksheet in class
Sept 19, T	Topic 5: Appraisals and Evaluating Pro Formas	* Linneman, chapter 8: "Development Pro Forma Analysis" * BP 1: <i>Nine Abuses Common in Pro Forma Cash Flow Projections</i>
Sept 21, Th	Topic 6: Introduction to leases and the economics of retail malls First part of Case 1 due. No discussion.	* Linneman, chapter 3: "The Fundamentals of Commercial Leases."
Sep 25, M	Required guest lecture (Sam Zell)	6pm-7pm, Prince Theater, Annenberg
Sep 26, Tu	No regular lecture in lieu of guest lecture	

Sep 28, Th	Case 1 part 2 due. Discussion of case 1.	
Oct 3, T	Topic 7: Debt structures and managing real estate risk	*Linneman, chapter 15: “Ground Leases as a Source of Finance.” *Linneman, chapter 17: “Real Estate Private Equity Funds”
Oct 5, Th	Fall Break	
Oct 10, T	Topic 7: Debt structures and managing real estate risk Required guest lecture (Alfonso Munk)	6pm-720pm, SHDH 350
Oct 12, Th	Topic 7: Debt structures and managing real estate risk	
Oct 17, T	Midterm Exam 1	
Oct 19, Th	Topic 8: Equity securitization and the REIT market Case 2 handed out in class.	*BP 2: Basic Valuation of a Real Estate Investment Trust *Linneman, chapter 18: “REITs and Liquid Real Estate”
Oct 24, T	Topic 8: Equity securitization and the REIT market	
Oct 26, Th	Topic 9: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	*BP 3: How to Build a Bond *Linneman, chapter 14: “Commercial Mortgage Backed Securities Basics”
Oct 27, F	Zell-Lurie Fall meetings	Not required. But highly recommended
Oct 31, T	Case 2 due. Case 3 handed out	
Nov 1, W	Required guest lecture (Tim Johnson)	6pm-720pm, SHDH 350
Nov 2, Th	No regular lecture in lieu of guest lecture	
Nov 7, T	Topic 9: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	
Nov 9, Th	Topic 10: Real estate cycles	*BP 4: Adjustment Mechanisms in Real Estate Markets Linneman, chapter 20: “Real Estate Cycles” Linneman, chapter 9: “Development Feasibility Analysis”
Nov 14, T	Topic 10: Real estate cycles	
Nov 16, Th	Case 3 due	
Nov 21, T	No class (in lieu of guest lecture on 10/10)	

Nov 23, Th	No class (Thanksgiving)	
Nov 28, T	Topic 11: Return and Risk in Housing Markets + The rent/own decision in residential and corporate real estate.	
Nov 30, Th	Topic 11: Return and Risk in Housing Markets + The rent/own decision in residential and corporate real estate.	
Dec 5, T	Topic 12: Corporate real estate usage	Linneman, chapter 19: "Corporate Real Estate Decision Making"
Dec 7, Th	Midterm Exam 2	

Regrade Policy

I strive for accuracy and equity in the grading for this class. However, despite our best efforts, grading is sometimes imperfect and the onus for bringing any errors to my attention falls upon you.

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.

1) 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.

2) 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. Be sure to take the time to make sure you understand the errors you made before submitting the regrade request.

3) 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. 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 we were too generous with the points given.

In addition, under no circumstances will I consider regrade requests that allege that the grading guidelines are unfair. The guidelines are applied equally to everyone, thus are equitable. Rather, the regrade request is intended to correct errors in adhering to the standard.

4) 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. **Under no circumstances will I go over the grading of your assignment in “real time,” with no forewarning.**

General policies:

- 1) 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 that went against you but not the ones in your favor.
- 2) Regrade requests will be accepted for **1 week** following the return of an assignment. If you cannot meet this deadline, send me an email requesting an extension. Requests for extensions must be submitted within 1 academic week following the return of an assignment.
- 3) You must drop off your regrade request in my mailbox in SHDH **and** send me an email to notify me about the submission. Do not submit regrade requests by email only.