

University of Pennsylvania
The Wharton School

Real Estate Finance: Investment and Analysis

REAL/FNCE 721

Fall 2018

MW 1030am-12pm (721-403) in JMHH F45

MW 130-3pm (721-404) in JMHH G55

July 2018 (preliminary and subject to change)

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Office Hours: Wed, 3-4pm
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 two articles available from Reprographics and Study.net.
- Additional **handouts** will be distributed in class and billed by the bursar. Extra copies will be available outside my office door.
- 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.
- **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. I generally summarize the guest lectures during the regular lecture subsequent to the guest lecture. **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:
 - *Brandon Weber, VTS Inc, Wed, Sept 26, 4:30-6:00 pm; JMHH G06*
 - *Ronald J. Kravit, Cerberus Capital, Tue, Oct 9, 4:30-6:00pm, SHDH 350*
 - *Nick Kittredge, Prologis, Wed, November 7, 4:30-5:45pm, 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 before the case is handed out, 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. You can form team members across the two 721 sections taught by me. 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. I strongly encourage you *not* to take the “divide and conquer” approach of having only one or two team members work on each case.

Cases are handed out in class. **Late cases will not be accepted nor will extensions be given.**

Honor code: It is your responsibility to make sure your entire team prepares the cases independently. Violations by any team member will result in the entire team getting a zero on the assignment.

You may verbally discuss the cases with other students who are currently enrolled in FNCE/REAL 721. Each group must separately prepare their own case materials and write-ups without reference to anyone else's case materials or write-ups. You may not obtain assistance from former students, current or past employees of firms involved with the cases. You also may not provide such assistance once you are no longer enrolled in this class. You may not share your written materials or Excel with anyone at any point.

Violations of these rules will be treated as violations of Penn's Code of Academic Integrity. I do not distinguish between the plagiarizer – the team using other's materials – and the provider of the materials. Do not circulate your solutions to the cases. If I find your case to be the source of plagiarized material, I will report the violation and do my best to retroactively change your grade.

Examinations:

Two midterm exams will be held in regularly scheduled class time, one on **October 15th (Monday)** and the other on **December 5th (Wednesday)**. 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.

Grading:

The course grade will be based on the following: Exams: 64 percent (32 percent each); Cases: 36 percent (12 percent each). I teach two graduate sections which will be curved together.

Superb or sub-par class participation adjustments will be made, and may contribute up to 5 percent of the grade. Sub-par participation includes arriving late to or missing classes. Attendance will be taken during case discussions and guest lectures. 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, be ready to comment on or discuss the class material. Please speak up if something is unclear.
- 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.

Copyrights:

All federal and state copyrights reserved for all original material presented in this course through any medium, including lecture and print. Any copyrighted material provided in this course is for your personal, noncommercial use and may not be copied and distributed to others without the prior permission of the copyright owner. Individuals are prohibited from being paid for taking or transferring their class notes without my express written permission.

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, W	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?"
Sep 3, M	Labor Day	
Sep 5, W	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 10, M	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 12, W	Topic 3: Debt financing and simple mortgages Case 1 handed out in class (no electronic copies available)	
Sept 17, M	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 19, W	Topic 4: Taxes and Real Estate	Tax worksheet in class
Sept 24, M	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 25, Tu	First part of Case 1 due on Canvas by 10am. No discussion.	
Sept 26, W	Topic 6: Introduction to leases and the economics of retail Required guest lecture (Brandon Weber, 4:30pm-6pm)	* Linneman, chapter 3: "The Fundamentals of Commercial Leases."

Oct 1, M	Case 1 part 2 due. Discussion of case 1.	
Oct 3, W	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 8, M	Topic 7: Debt structures and managing real estate risk	
Oct 9, Tu	Required guest lecture (Ron Kravit, 4:30pm-6pm, SHDH 350)	
Oct 10, W	Topic 8: Equity securitization and the REIT market Case 2 handed out in class.	*Linneman, chapter 18: “REITs and Liquid Real Estate”
Oct 15, M	Midterm Exam 1	
Oct 17, W	Topic 8: Equity securitization and the REIT market	
Oct 22, M	No class in lieu of 1 st guest lecture	
Oct 24, W	No class in lieu of 2 nd guest lecture	
Oct 29, M	Topic 9: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	*Linneman, chapter 14: “Commercial Mortgage Backed Securities Basics”
Oct 31, W	Case 2 due. Case 3 handed out	
Nov 2, F	Zell-Lurie Fall meetings	Not required. But highly recommended
Nov 5, M	Topic 9: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	
Nov 7, W	Topic 10: 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”
Nov 12, M	Topic 10: Real estate cycles	
Nov 14, W	Case 3 due	
Nov 19, M	No class in lieu of 3 rd guest lecture	
Nov 21, W	Thanksgiving break	
Nov 26, M	Topic 11: Return and Risk in Housing Markets + The	

	rent/own decision in residential and corporate real estate.	
Nov 28, W	Topic 11: Return and Risk in Housing Markets + The rent/own decision in residential and corporate real estate.	
Dec 3, M	Topic 12: Corporate real estate usage	Linneman, chapter 19: "Corporate Real Estate Decision Making"
Dec 5, W	Midterm Exam 2	
Dec 10, M	Wrap-up lecture on current events	

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.

To submit a regrade request:

- 1) Please *type* up a cover letter with a bullet point outline of:
 - a. The question involved
 - b. The points requested
 - c. A substantive explanation of the request
- 2) Submit the cover letter along with the assignment to me in person or put it in the box outside my office (1464 SHDH)
- 3) Email me to inform me you dropped off your midterm request

General policies:

- 1) 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.
- 2) 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.
- 3) Do not submit regrade requests by email only.
- 4) 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.
- 5) Under no circumstances will I go over the grading of your assignment in “real time,” with no forewarning.