

University of Pennsylvania  
The Wharton School

**Real Estate Finance: Investment and Analysis**  
**REAL/FNCE 721-405/406/407**  
**Spring 2019, SHDH215 (405)/JMHH F60 (406/407)**

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Office Hours: Tuesday, 2:00-4:00 p.m.  
(sign up on Canvas) 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 many of the topics from this class in more detail.

*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. If you have prior experience in the real estate industry, some topics might be familiar to you already.*

***Course Materials:***

The **textbook** for the course is *Real Estate Finance and Investments, Third Edition or newer*, by Linneman. It is available at the Penn Bookstore. A good alternative with more technical detail is *Commercial Real Estate Analysis and Investments* by Geltner and Miller. Other supplemental readings are *Investing in REITs* (Block) and *A Primer of Securitization* (Kendall and Fishman). All of these texts are available on reserve at Lippincott.

Additional **readings** assigned on the syllabus below are available from **Study.net via Canvas**.

**Course Materials (cont.):**

Please check **Canvas** regularly for updates relating to the class and additional 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 and reading
- Case materials (when available electronically)
- Announcements, updates, and clarifications
- Discussion threads with case- or exam-related Q+A

Occasional **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.

You must have a **financial calculator** capable of computing annuities, present values, and IRR. You are responsible for knowing how to use these functions. You will need the calculator for the exams. The calculator you were supposed to obtain for FNCE 611 will be more than adequate.

**Guest Speakers:**

Guest speakers are scheduled outside of normal class time, as listed on the schedule below. One regular lecture is canceled for each guest lecture. These sessions are **required** material. I do not videotape these lectures in instances where doing so would prevent the guest from speaking freely. If this is the case, you will need to get the notes from someone else if you are unable to attend.

**Grading:**

The course grade will be primarily based on your performance on **two midterm exams** (25 percent each), **three case** assignments (13.3 percent each). Details on each are provided below. The due dates and times for all assignments are final. Failure to submit an exam or assignment on time will result in zero points for that exercise. The **regrade** policy is appended to this syllabus.

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.

The final portion (10 percent) of the grade will be awarded for **participation** in class and case discussions. Sub-par participation includes violations of the attendance and technology policies outlined below.

**Exams:**

The two midterm exams will be held in regularly scheduled class time, one on **Wednesday, February 27** and the other on **Monday, April 29**. The second exam is not cumulative in content, but assumes proficiency in basic skills taught in the first portion of the class. Exams will cover material discussed 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" sheet of notes (double-sided) into each exam. You will need to bring a financial calculator to the exams. You will not be allowed to use a computer or tablet.

*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 the exam dates, please do not take this class.** Make-ups will only be given if you have a Wharton Dean's Office-approved excuse and email me to inform me before the exam starts. For a medical excuse, you must have been admitted for treatment by student health services or a hospital or have a doctor's note explaining that you were incapacitated.*

**Practice problems** and **old exams** will be made available on Canvas, along with detailed solutions. I strongly recommend that you do these as 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 **two to five members** of your own section. **Register your team** by signing up on Canvas before submitting each case.

The cases require a variety of skills, from financial savvy to management, so try to have a mix of talents and backgrounds on your team. 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; however, each group must separately prepare their own case materials and write-ups.

You are responsible to make the team work, so please select your team members carefully. If you wish to switch case teams during the semester, register with your new team **after** submitting the previous case with your old team and **before** submitting the next case with your new team.

Cases are handed out in class. I do not distribute electronic copies of cases. Cases are to be submitted on Canvas by 10:00am on their due date, at which time submissions will be automatically locked. **Late cases will not be accepted nor will extensions be given.**

**Classroom expectations:**

- I expect you to **be prepared** for class. That means: having completed the *required* readings (listed on the syllabus with an asterisk (\*)) in advance of the lecture and being ready to comment on or discuss the class material.
- I expect you to **participate** in class discussions, and to speak up if you're bewildered.
- 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.
- The **seat** you choose on the third class meeting (January 22) is yours for the entire semester. Please sit there every class, except during exams, when I will randomly assign new seats.
- I appreciate it if you display your **name tents**.

**Attendance:**

I will start recording **attendance** using the Wharton Connect App on **January 28** (Mon). Any more than three absences over the course of the semester will adversely affect your participation grade. Arriving five or more minutes late for class is treated as an absence and absences will be excused only for specific reasons listed on the MBA program website (personal illness, personal or family emergency, and religious holidays for observant students). If you would like to be excused from a class or believe that you were marked absent for class erroneously, please enter an explanation on SPIKE. Absences due to late check-ins 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.

**Technology:**

- **Tablets** may be used for note-taking only. Screens need to be flat on the table so as to not distract other students. I reserve the right to change this policy if it impacts the learning environment.
- Some lectures center around excel spreadsheets. I will notify you in advance if you can bring a **laptop**. Otherwise, you may not use a laptop unless medically necessary. If you have a medical excuse, please inform me before class begins.
- **Phones** must be turned off and put away at the beginning of class.

**Disclaimers:**

- The class **schedule** is an ambitious goal and may not reflect the actual timing, or even sequence, of the material covered.
- Be aware that it is the policy of the Real Estate Department that students who take the class **pass/fail** cannot count the course toward 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.
- Get help from **your TAs**.
  - Isabella Wei ([iwei@wharton.upenn.edu](mailto:iwei@wharton.upenn.edu)) will be your “go-to” TA for help with problem sets and midterm exam preparation.
  - Will Smith ([wsmith61@wharton.upenn.edu](mailto:wsmith61@wharton.upenn.edu)), Patrick Snodgrass ([psno@wharton.upenn.edu](mailto:psno@wharton.upenn.edu)), and Jesse Treverton ([jtrev@wharton.upenn.edu](mailto:jtrev@wharton.upenn.edu)) will each be your “go-to” TA for cases 1, 2, and 3, respectively.
- The TA and I will post on **Q&A discussion boards** on Canvas ahead of case due dates and exams. Please check that we haven’t already answered your question there before emailing.
- **TA office hours** will be scheduled and posted on Canvas ahead of each midterm and before each case is handed out.

**Course Schedule**

Required readings are marked with an asterisk (\*). The other readings are optional.

Date	Topic	Readings/Assignments
Jan 16 (Wed)	Topic #1: Course requirements, class overview, and overview of real estate markets	Linneman, ch. 2: "What Is Real Estate?" <a href="#">Emerging Trends in Real Estate 2019 (Chapters 1-2)</a>
Jan 21 (Mon)	No Class. <i>MLK Day</i>	
Jan 23 (Wed)	Topic #2: Real estate valuation and returns	*Linneman, ch. 9: "The Use and Selection of Cap Rates" Linneman, "Prerequisite I: The Basics of Discounted Cash Flow and Net Present Value Analyses"
Jan 28 (Mon)	Topic #3: Property-level income <b>Seat selection.</b>	*Linneman, ch. 5: "Property Level Pro Forma Analysis". Linneman, "Prerequisite II: Internal Rate of Return"
Jan 30 (Wed)	Topic #4: Simple mortgages	*Linneman, ch. 15: "The Use of Debt and Mortgages" Linneman, ch. 13: "Real Estate Bankruptcy Basics" Linneman, "Prerequisite III: Amortization Fundamentals"
Feb 4 (Mon)	Topic #5: Taxes and real estate	*Linneman, ch. 18: "Real Estate Exit Strategies."
Feb 6 (Wed)	Topic #6: Property-level risk and return <b>Case #1 handed out in class</b>	*Linneman, ch. 6: "Financial Modeling" *Linneman, ch. 14: "Should You Borrow?"
Feb 11 (Mon)	Topic #7: Leases	*Linneman, ch. 4: "The Fundamentals of Commercial Leases."
Feb 12 (Tue)	<b>Guest lecture: Olivia Hamlet, Managing Director, Blackstone (6-7:20pm, location TBA)</b>	
Feb 13 (Wed)	Topic #8: Debt structures and managing real estate risk	*Linneman, ch. 17: "Ground Leases as a Source of Finance." <i>*Guide to Real Estate Capital Markets: Participating Debt and Equity. [This article is a bit dry. Do your best to wade through, and don't worry about the "Parameters" sections.]</i>
Feb 18 (Mon)	Topic #8: Debt structures and managing real estate risk (cont.)	*Linneman, ch. 19: "Real Estate Private Equity Funds"
Feb 20 (Wed)	Case #1 discussion	<b>Case #1 due before 10a.m.</b>
Feb 25 (Mon)	Topic #9: Pro forma evaluation	*Linneman, ch. 10: "Development Pro Forma Analysis" <i>*Nine Abuses Common in Pro Forma Cash Flow Projections</i>
Feb 27 (Wed)	<b>Midterm Exam #1</b>	
Mar 4 & 6	No Class. <i>Spring Break</i>	

Date	Topic	Readings/Assignments
Mar 11 (Mon)	Topic #10: Equity securitization and the REIT market  <b>Case #2 handed out in class</b>	* <i>REITs for Rookies</i> * <i>Basic Valuation of a Real Estate Investment Trust</i> * Linneman, ch. 12: "Real Estate Company Analysis."  * Linneman, ch. 18: "REITs and Liquid Real Estate"
Mar 13 (Wed)	Topic #10: Equity securitization and the REIT market, continued	* <i>UPREITs: A Vehicle for Tax Deferral and Asset Growth</i> * <i>REITs and Taxes</i>
Mar 18 (Mon)	Topic #11: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	*Linneman, ch. 16: "Sources of Long- and Short-Term Debt"  *How to Build a Bond Linneman, "Supplemental II: CMBS Case Study"
Mar 20 (Wed)	Topic #11: Securitization of Debt Interests: Commercial Mortgage-Backed Securities, continued.	
Mar 25 (Mon)	Case #2 discussion	<b>Case #2 due before 10a.m.</b>
Mar 27 (Wed)	Class cancelled in lieu of April 2 guest lecture	
Apr 1 (Mon)	Topic #12: Real estate cycles  <b>Case #3 handed out in class</b>	*Linneman, ch. 25: "Real Estate Cycles" * <i>Adjustment Mechanisms in Real Estate Markets</i> Linneman, ch. 11: "Development Feasibility Analysis"
Apr 2 (Tue)	<b>Guest lecture: Carl Tash, Chief Strategist, Starwood Retail Partners (6-7:20pm, location TBA)</b>	
Apr 3 (Wed)	Topic #12: Real estate cycles, continued	
Apr 8 (Mon)	Topic #13: Housing	*Safety in Renting
Apr 9 (Tue)	<b>Guest lecture: Jay Mantz, President, Rialto Capital Management (6-7:20pm, location TBA)</b>	
Apr 10 (Wed)	Topic #13: Housing, continued	Superstar Cities
Apr 15 (Mon)	Case #3 discussion	<b>Case #3 due before 10a.m.</b>
Apr 17 (Wed)	Class cancelled in lieu of April 9 guest lecture	
Apr 22 (Mon)	Topic #14: Corporate real estate	*Linneman, ch. 23: "Corporate Real Estate Decision Making"
Apr 24 (Wed)	Midterm Review	
Apr 29 (Mon)	<b>Midterm Exam #2</b>	
May 1 (Wed)	Class cancelled in lieu of Feb 12 guest lecture	

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**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 the Real Estate Department, Suite 1400 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. 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. 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. 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:*

- I personally do all the regrades, in conference with the graders.
- 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.
- Regrade requests will be accepted for ***one week*** 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 one week after the return of the *last* part of the assignment.
- The acceptable margin of error on a 100-point assignment is +/- 2 points. I will not consider 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.
- Do not submit regrade requests by email.