

University of Pennsylvania
The Wharton School

Real Estate Finance: Investment and Analysis
REAL/FNCE 209-401, 209-403, 721-407
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Office Hours: Tuesdays and Thursdays, 4:30 – 5:30 p.m.
(sign up on Canvas) and by appointment
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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 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*, by Linneman. It is available at the Penn Bookstore. I recommend purchasing the third edition since it is substantially different from the second edition. Two alternative texts, *Commercial Real Estate Analysis and Investments* by Geltner and Miller and *Real Estate Finance and Investments* by Brueggeman and Fisher, as well as two supplemental books, *Investing in REITs* (Block) and *A Primer of Securitization* (Kendall and Fishman), are available on reserve at Lippincott. You may find them useful as supplemental resources or for additional background and context.

Additional **readings** are available at Study.net. Some are required, others are recommended.

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);
- Announcements, updates, and clarifications; and,
- Discussion threads with case- or exam-related Q+A.

Non-Wharton students will need to apply for a Wharton account in order to get access to Canvas at <http://accounts.wharton.upenn.edu/>.

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 100 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. 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.

Grading:

The course grade will be based on **two midterm exams** (30 percent each) and **three cases** (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.

While I will not explicitly grade your attendance in the class, I will consider superb or sub-par class **participation** when deciding grades. Sub-par participation includes arriving late to or missing classes. This may contribute up to a third of a letter grade in your final grade.

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 under-performance across assignments.

Examinations:

The two midterm exams will be held in regularly scheduled class time, one on **Thursday, March 6** and the other on **Tuesday, 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 these dates, please drop the class now.** Make-ups will only be given if you have a Wharton Dean's Office-approved excuse, email me to inform me before the exam starts and, if you are an undergrad, register your absence in the Course Absence Report System on Courses InTouch. For a medical excuse, you must have been **admitted** to the hospital or have been incapacitated on the day of the exam.*

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 **three to five members** of your own section, and must work with the same team on all three cases. **Register your team** by signing up on Canvas **before January 30**. If you are not registered to a team by then, I will assign you to one.

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. 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. If you still feel aggrieved after the case is done, send me an email with your name, the case, the offending group member, the nature of the problem, and steps you have taken to mitigate the problem. If two or more serious complaints are registered against you by your group members, 20% will be deducted from your overall case grade.

Cases are to be submitted on Canvas by 10:00am on "case discussion" day, at which time submissions will be automatically locked. **Late cases will not be accepted nor will extensions be given.** If you miss class on a "case discussion" day, 10% will be deducted from your grade for that case.

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.
- **Tablets** can be used for note-taking only. You may not use computers, PDAs, Treos, Blackberries, etc., unless medically necessary.
- The **seat** you choose on the fourth class meeting (January 28) is yours for the entire semester. Please sit there every class, except during exams, when I will randomly assign new seats.

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. While non-majors can take the course pass/fail, grades will not be "uncovered" if a student later decides to become a real estate concentrator.

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.**
 - Suneal Vishnupad (email: vsuneal@wharton.upenn.edu) will be your "go-to" TA for exam preparation. He will also hold bi-weekly recitations reviewing problem-solving techniques for quantitative exam questions.
 - Eric Wright (email: erwright@wharton.upenn.edu), TBD (email: TBD), and Adam Goldberg (email: agoldb@wharton.upenn.edu) will each be a "go-to" TA for cases 1, 2, and 3, respectively.
- The TAs 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 here before emailing us.
- Office hours and recitations will be scheduled at the beginning of the semester.

Course Schedule

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

Date	Topic	Readings/Assignments
January 16, Th	Topic #1: Course requirements, class overview, and overview of real estate markets	Linneman, chapter 2: "What Is Real Estate?" <i>Emerging Trends in Real Estate 2014</i>
January 21, Tu	Topic #2: Real estate valuation and returns	*Linneman, chapter 7: "The Use and Selection of Cap Rates" <i>How Reliable Are Commercial Appraisals? Another Look</i> <i>How Accurate Are Commercial Real Estate Appraisals? Evidence from 25 Years of NCREIF Sales Data</i> Linneman, "Prerequisite I: The Basics of Discounted Cash Flow and Net Present Value Analyses" Brealey and Myers, <i>Principles of Corporate Finance</i> , chapter 3: "How to Calculate Present Values."
January 23, Th	Topic #3: Leases and the economics of retail malls	*Linneman, chapter 3: "The Fundamentals of Commercial Leases." <i>Mall Myths</i> <i>The Changing Design of Shopping Places</i> <i>The Evolution of Retailing in the United States</i> <i>Creating a New Suburban Town Center</i> <i>Power Center Meets Lifestyle Center</i>
January 28, Tu	Topic #4: Property-level income	*Linneman, chapter 4: "Property Level Pro Forma Analysis", pp. 43-55. Linneman, "Prerequisite II: IRR: What It Is and What It Isn't"
January 30, Th	Topic #5: Simple mortgages Register your case team by today!	*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, "Prerequisite III: Amortization Fundamentals"
February 4, Tu	Topic #6: Taxes and real estate	*Linneman, chapter 4: "Property Level Pro Forma Analysis", pp. 55-56, 59-63.
February 6, Th	Topic #7: Evaluating pro forma analysis Case #1 handed out in class	*Linneman, chapter 8: "Development Pro Forma Analysis" <i>*Nine Abuses Common in Pro Forma Cash Flow Projections</i>
February 11, Tu	Topic #8: Property-level risk and return	*Linneman, chapter 5: "Financial Modeling" *Linneman, chapter 12: "Should You Borrow?"
February 13, Th	Topic #8: Property-level risk and return, continued.	*Linneman, chapter 16: "Real Estate Exit Strategies."

Date	Topic	Readings/Assignments
February 18, Tu	Topic #9: Debt structures and managing real estate risk	*Linneman, chapter 15: "Ground Leases as a Source of Finance."
February 20, Th	Topic #9: Debt structures and managing real estate risk, (continued). First part of Case #1 due before 10a.m. No discussion.	* <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 17: "Real Estate Private Equity Funds" <i>Real Estate Private Equity Funds</i>
February 24, Mo	Guest Lecture, 6:00 – 7:20 p.m.	
February 25, Tu	No Class. <i>Canceled because of guest lecture.</i>	
February 27, Th	Case #1 discussion	Second part of Case #1 due before 10a.m.
March 4, Tu	Midterm Review	
March 6, Th	Midterm Exam 1	
March 11 & 13	No Class. <i>Spring Break</i>	
March 18, Tu	Topic #10: Real estate cycles Case #2 handed out in class	*Linneman, chapter 20: "Real Estate Cycles" * <i>Adjustment Mechanisms in Real Estate Markets (When) Will We Do It Again?</i> Linneman, chapter 9: "Development Feasibility Analysis" Linneman, chapter 20 Supplement C: <i>Will We Need More Office Space?</i> <i>Developer: Villain or Hero?</i> <i>Living Downtown</i> <i>Superstar Cities</i>
March 20, Th	Topic #11: Equity securitization and the REIT market	* <i>REITs for Rookies</i> * <i>Basic Valuation of a Real Estate Investment Trust</i> * Linneman, chapter 10: "Real Estate Company Analysis." * Linneman, chapter 18: "REITs and Liquid Real Estate" <i>Real Estate: Past, Present, and Future</i> <i>The Making of an Asset Class</i> <i>Liquid Real Estate</i> <i>REITs as an Alternative Investment in Volatile Financial Markets</i> <i>REIT Share Prices and the Declining Relative Importance of Commercial Real Estate</i>
March 25, Tu	No Regular Class. <i>Canceled because of guest lecture.</i> Guest Lecture, 6:00 – 7:20 p.m.	

Date	Topic	Readings/Assignments
March 27, Th	Topic #11: Equity securitization and the REIT market, continued	* <i>UPREITS: A Vehicle for Tax Deferral and Asset Growth</i> * <i>REITs and Taxes</i> Linneman, chapter 18 Supplement A: <i>Forces Changing the Real Estate Industry Forever</i> Linneman, chapter 18 Supplement B: <i>Forces Changing the Real Estate Industry Forever: Five Years Later</i> <i>The Five Overlooked Features of the Real Estate Capital Markets</i> <i>The Pressures on Public REITs to Grow Larger</i>
April 1, Tu	Case #2 discussion Case #3 handed out in class	Case #2 due before 10a.m.
April 3, Th	Topic #12: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	* Linneman, chapter 14: "Commercial Mortgage Backed Securities Basics" * <i>How to Build a Bond</i> Linneman, "Supplemental II: A Look at a Real CMBS Issue"
April 8, Tu	No Regular Class. <i>Canceled because of guest lecture.</i> Guest Lecture, 6:00 – 7:20 p.m.	
April 10, Th	Topic #12: Securitization of Debt Interests: Commercial Mortgage-Backed Securities, continued.	* <i>Defaults in Securitized Real Estate Loans</i> * <i>The Past, Present, and Future of CMBS</i> <i>The Mortgage REITs: Dynamos or Duds?</i>
April 15, Tu	Case #3 discussion	Case #3 due before 10a.m.
April 17, Th	Topic #13: The rent/own decision in residential and corporate real estate	*Linneman, chapter 19: "Corporate Real Estate Decision Making" Linneman, chapter 19 supplement B: <i>Evaluating the Decision to Own Corporate Real Estate</i>
April 22, Tu	Topic #14: Return and Risk in Housing Markets (with a parallel to commercial real estate)	* <i>Safety in Renting</i> <i>Assessing High House Prices: Bubbles, Fundamentals, and Misperceptions</i>
April 24, Th	Midterm Review	
April 29, Tu	Midterm Exam 2	