

University of Pennsylvania
The Wharton School

Real Estate Investment: Analysis and Financing
REAL/FNCE 209

Spring 2016

JMHH F90, TuTh 10.30-12.00 pm (209-401), TuTh 1.30-3.00 pm (209-403)

Preliminary and subject to change
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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.

Prerequisites:

For undergraduate students, Finance 100 is a strict prerequisite for enrollment. By extension, the Wharton undergraduate economics sequence and Mathematics 104 are also prerequisites. In rare instances, the requirement may be waived for College, Engineering, or Nursing students with equivalent coursework in finance.

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.

Please check **Canvas** regularly for updates relating to the class and additional materials:

- Copies of the PowerPoint slides used in class
- Updates to the class notes, when necessary
- 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
- 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. These sessions are **required** material. **Attendance is required unless you have a valid conflict.** Email me if you cannot attend the guest lecture. 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.

The guest lectures for this semester are:

- *Riggs Kubiak, CEO and founder of Honest Buildings, February 15, 6-7 pm*
- *Adam Gallistel, Managing Director and Deputy Regional Head for the Americas at GIC Real Estate, March 30, 6-7 pm*
- *Bruce Gamble, Managing Director at Navigant Consulting, April 4, 6-7 pm*

One regular lecture is canceled for each guest lecture. These may not be in the same week as the guest lecture.

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** in class and case discussions when deciding grades. Sub-par participation includes arriving late to or missing classes. This will contribute up to a third of a letter grade in your final grade.

The regrade policy is appended to the syllabus.

Examinations:

The two midterm exams will be held in regularly scheduled class time, one on **Tuesday, March 1** and the other on **Tuesday, April 26**. 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. 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 will only be given if you have a Wharton Dean's Office-approved excuse, email me to inform me before the exam starts. For a medical excuse, you must have been **admitted** to the hospital or have been incapacitated on the day of the exam. A Confirmation of Encounter from Student Health Service alone will not suffice, unless there is a note/email from a nurse/doctor 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 **three to five members** of your own section. **Register your team** by signing up on Canvas **before January 26**. 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 10:00 am** by the due date reported in the syllabus, 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.
- You may not use computers, smart phones, etc., unless medically necessary. (I appreciate that some of you like to take notes on a computer, but past abuses have forced me to this policy.) I allow the use of tablets to take notes, but nothing else. Screens need to be flat on the table so as not to distract other students and my lecturing. I reserve the right to change this policy if this impacts the learning environment.
- The seat you choose on the fourth class meeting (January 26) is yours for the entire semester. Please sit there every class, except during exams, when I will randomly assign new seats.
- Please refer to the Wharton Undergraduate Program's Policy on Secular & Religious Holidays for information specifically relating to absences on account of religious observance.

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.**
 - William Helmold (whelmold@wharton.upenn.edu), Annie Doud (adoud@wharton.upenn.edu), and Paul Zarian (zarian@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.
 - TA office hours will be scheduled and posted on Canvas before each case is handed out.

Course Schedule

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

Date	Topic	Readings / Assignments
Th January 14	Topic #1: Course requirements, class overview, and overview of real estate markets	*BP #1: <i>Emerging Trends in Real Estate 2015</i> , chapters 1-2. Linneman, chapter 2: "What Is Real Estate?", pp. 12-35.
Tu January 19	Topic #2: Elements of real estate value: Income and expenses; pro-forma setup	*Linneman, chapter 4: "Property Level Pro Forma Analysis", pp. 43-55. *Linneman, chapter 5: "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" Brealey and Myers, <i>Principles of Corporate Finance</i> , chapter 3: "How to Calculate Present Values."
Th January 21	Topic #2, continued: Cap rates; property-level risk	*Linneman, chapter 7: "The Use and Selection of Cap Rates"
Tu January 26	Topic #3: Mortgages Sign up for a case team Case 1 handed out in class (no electronic copies available) Choose your seats today	Linneman, "Prerequisite III: Amortization Fundamentals"
Th January 28	Topic #3: Mortgages, continued Topic #4: Debt financing, land leases, hybrid structures, and partnerships	*BP #3: <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 4: "Property Level Pro Forma Analysis", pp. 56-58. *Linneman, chapter 13: "The Use of Debt and Mortgages" *Linneman, Chapter 15: "Ground Leases as a Source of Finance." *Linneman, chapter 17: "Real Estate Private Equity Funds" Linneman, chapter 11: "Real Estate Bankruptcy Basics" Linneman, chapter 12: "Should You Borrow?" OPT #5: <i>Real Estate Private Equity Funds</i>
Tu February 02	Topic #4, continued	
Th February 04	Topic #5: Taxes and Real Estate	*Linneman, chapter 4: "Property Level Pro Forma Analysis", pp. 55-56, 59-63. *Linneman, chapter 16: "Real Estate Exit Strategies."

Tu February 09	Topic #6: Evaluating Pro Formas	<p>*BP #2: <i>Nine Abuses Common in Pro Forma Cash Flow Projections</i></p> <p>*Linneman, chapter 8: "Development Pro Forma Analysis"</p> <p>OPT #1: <i>How Reliable Are Commercial Appraisals? Another Look</i></p>
Th February 11	Topic #6, continued	
	Case 1 part 1 due today (no discussion)	
Mon February 15	Guest speaker: Riggs Kubiak SHDH 350	
Tu February 16	No class <i>Canceled in lieu of February 15 guest lecture</i>	
Th February 18	Topic #7: Introduction to leases and the economics of retail malls	<p>*Linneman, chapter 3: "The Fundamentals of Commercial Leases."</p> <p>OPT #2: <i>Mall Myths</i></p> <p>OPT #3: <i>The Changing Design of Shopping Places</i></p> <p>OPT #4: <i>The Evolution of Retailing in the United States</i></p>
Tu February 23	Case 1 part 2 due today	
	Case 1 discussion	
Th February 25	Topic #8: Real estate cycles	<p>*BP #4: <i>Adjustment Mechanisms in Real Estate Markets</i></p> <p>*BP #5: <i>The Making of an Asset Class</i></p> <p>Linneman, chapter 20: "Real Estate Cycles"</p> <p>Linneman, chapter 9: "Development Feasibility Analysis"</p> <p>OPT #6: <i>Superstar Cities</i></p> <p>OPT #7: <i>Will We Need More Office Space?</i></p> <p>OPT #8: <i>Living Downtown</i></p> <p>OPT #9: <i>Developer: Villain or Hero?</i></p> <p>OPT #10: <i>(When) Will We Do It Again?</i></p>
Tu March 01	Midterm Exam 1	
Th March 03	No class <i>Canceled in lieu of April 4 guest lecture</i>	
Tu March 8, Th March 10	No class <i>Spring Break</i>	
Tu March 15	Topic #9: Equity securitization and the REIT market	<p>*BP #9: <i>Basic Valuation of a Real Estate Investment Trust</i></p> <p>*Linneman, chapter 18: "REITs and Liquid Real Estate"</p> <p>OPT #12: <i>REIT Share Prices and the Declining Relative Importance of Commercial Real Estate</i></p> <p>OPT #13: <i>Liquid Real Estate</i></p>

		OPT #14: <i>REITs as an Alternative Investment in Volatile Financial Markets</i>
Th March 17	Topic #9: Equity securitization and the REIT market, continued Case 2 handed out	*Linneman, chapter 10: “Real Estate Company Analysis.” *BP #10: <i>UPREITs: A Vehicle for Tax Deferral and Asset Growth</i> *BP #11: <i>Forces Changing the Real Estate Industry Forever</i> *BP #12: <i>The Five Overlooked Features of the Real Estate Capital Markets</i> OPT #15: <i>REITs and Taxes</i> OPT: <i>Linneman, Chapter 18 Supplement A: The Forces Changing Real Estate Forever: Five Years Later</i>
Tu March 22	Topic #10: Securitization of Debt Interests: Commercial Mortgage-Backed Securities	*BP #6: <i>How to Build a Bond</i> *BP #7: <i>The Past, Present, and Future of CMBS</i> *Linneman, chapter 14: “Commercial Mortgage Backed Securities Basics” Linneman, “Supplemental II: A Look at a Real CMBS Issue”
Th March 24	Topic #10: Securitization of Debt Interests: Commercial Mortgage-Backed Securities, continued	*BP #8: <i>Defaults in Securitized Real Estate Loans</i> OPT #11: <i>The Mortgage REITs: Dynamos or Duds?</i>
Tu March 29	No class <i>Canceled in lieu of March 30 guest lecture</i>	
Wed March 30	Guest Speaker: Adam Gallistel <i>SHDH 350</i>	
Th March 31	Case #2 discussion. Case 3 handed out.	
Mon April 4	Guest speaker 3: Bruce Gamble <i>SHDH 350</i>	
Tu April 05	Topic #10: Securitization of Debt Interests: Commercial Mortgage-Backed Securities, continued	
Th April 07	Topic #11: The rent/own decision in corporate and residential real estate	*Linneman, chapter 19: “ Corporate Real Estate Decision Making ”
Tu April 12	Topic #11: The rent/own decision in corporate and residential real estate, continued	
Th April 14	Case #3 due today	

	Case 3 discussion	
Tu April 19	Topic #12: Return and Risk in Housing Markets	OPT #16: <i>Assessing High House Prices: Bubbles, Fundamentals, and Misperceptions</i>
Th April 21	Topic #12: Return and Risk in Housing Markets, continued / midterm review	*BP #13: Safety in Renting
Tu April 26	Midterm Exam 2	

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.**