

The Wharton School of the University of Pennsylvania

Real Estate Finance and Investments
REAL 721: MBA for Executives

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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.

This class tries to strike a balance between covering a breadth of topics and providing a thorough treatment of the topics we do cover in the limited time we have. *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.*

Course Overview:

The class material breaks down into three major sections:

- 1) The risk and return of property-level real estate investments. The goal is to be able to interpret, understand, and evaluate a real estate property investment *pro forma*. To that end, we will spend some time covering the structure and vocabulary used in these *pro formas* then using them as a tool for analyzing real estate investments.
- 2) The economics of commercial real estate markets: Understanding the forces that will determine the value and income-producing potential of a real estate investment.
- 3) Topics in real estate. This section is reserved for important real estate issues of the day. This year, we will cover Commercial Mortgage Backed Securities and Real Estate Investment Trusts.

Course Materials:

Textbook: *Commercial Real Estate: Analysis and Investments*, by Geltner, Miller, Clayton, and Eichholtz, is required. The class uses *edition 3e*, and the syllabus will refer to that version. *Real Estate Finance and Investments* by Linneman (any version) does a good job with the material in the first half of the class and is listed as an alternative to the Geltner and Miller text. We will make chapters from Linneman available on Study.net to the extent agreed to by the publisher. The full book is available for purchase at linnemanassociates.com.

Class notes: Copies of the PowerPoint slides used in class will be posted in PDF format on

Canvas in advance of class time. Even if the slides are posted well in advance, we often update and modify them a day or two before class, so you should plan to download the most current version shortly before class.

Readings: Available at Study.net. Not all the readings in the Study.net pack are required. The syllabus tells you which readings are required and which are optional.

Class Preparation:

Required readings: These readings are listed on the syllabus with an asterisk (*) and are in bold print. They are drawn from the textbook and the Study.net readings. You should read them in advance of the class in which they are listed.

Videos: A handful of videos substitute for readings. You need to watch them before class.

Optional readings: For interested students, the syllabus lists recommended (but optional) readings. These readings either expand upon or reinforce the topics we cover in class.

Practice problems: A set of practice problems and detailed solutions will be available on Canvas. Doing these problems is a fundamental part of the class. Please do the practice problems after the topic set in which they are covered. (For example, do Practice Problems set #2 after we cover Topic #2.) We will neither ask you to hand in the problem sets nor grade them. This is not an indication that we consider them unimportant.

Old exams: Some sample exam questions (and solutions) will be available on Canvas.

Grading:

Workload: There will be two group projects (one pro forma exercise and one case) and one exam. This is exactly 50% of the workload of the full-semester 721 class offered in the full-time MBA program.

Weights: The course grade will be based on the following:

- Exam: 35 percent
- Exercise: 30 percent
- Case: 35 percent

Exam: The exam will be administered online via Canvas. It will be available for a week starting shortly after the last class and you will have flexibility in when you take it. **You must pass the exam to pass the class** – it is the only individual grade we have for you. I will strive to be as transparent as possible in advance about what a “passing exam performance” entails. The exam will be open-book, open-notes, and you may use a calculator and/or Excel (starting with a blank workbook).

Curve: Each individual assignment is curved 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. 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.

Regrades: My policy on regrades is appended to the syllabus.

Cases and exercises:

Distribution: The exercise and case will be made available on Canvas.

Teams: You will choose your own case team of three to four members. It is your responsibility to find a team. You and your teammates should sign up under the “team sign-up” section on Canvas.

Independent work: You may discuss the exercise and the case with other groups and give and receive assistance. However, each group must separately prepare their own exercise and case materials and write-ups.

Due dates: The due dates will be listed on the assignments, on Canvas, and in the syllabus. **Late assignments will not be accepted nor will extensions be given.**

Classroom Expectations:

Be on time: I will start on time and end on time.

Be prepared: Completed the *required* readings in advance of the lecture and be ready to comment on or discuss the class material. Watch the videos in advance.

Participation: Be willing to participate in class discussions, and to speak up if you’re bewildered.

Getting help:

Canvas: I rely on Canvas to communicate with you and provide class materials:

- Copies of the PowerPoint slides used in class (in PDF format)
- Sample Excel spreadsheets from the in-class examples
- Practice problems and solutions
- Supplemental class material, such as newspaper articles
- Announcements, updates, and clarifications
- Discussion threads for Q+A (e.g., about the case)

Email: Do not think that a question is too “basic” to ask us. We are happy to help students understand any material they are having difficulty with. All we ask is that you take a serious stab at it yourself before turning to us.

Office hours: It is best to email me and I’ll schedule an appointment, even just to chat. We’re happy to do so; it’s easy by Zoom.

Disclaimers:

Schedule: The class schedule is an ambitious goal and may not reflect the actual timing, or even sequence, of covering material.

Course Schedule

<p>Class 1: (Friday, August 20, 9:30 a.m. – 12:30 p.m. PST)</p>	<p>Topic #1: Overview of real estate markets Topic #2: Pro-forma valuation mechanics and cap rates</p> <ul style="list-style-type: none"> - NPV - Cap rates - Leases - Leverage 	<p><u>Watch before class:</u></p> <ul style="list-style-type: none"> - Valuation video - Cap rate video <p><u>Required</u> Geltner & Miller, Chapter 1.2.3-1.2.4: “Pricing of Real Estate Assets,” pp.17-21 Geltner & Miller, Chapter 11: “Nuts and Bolts for Real Estate Valuation: Cash Flow Proformas and Discount Rates,” pp.229-252. Geltner & Miller, Chapter 14.1-14.3.2: “After-tax Investment Analysis and Corporate Real Estate,” pp.308-322 Geltner & Miller, Chapter 18.2: “Commercial Mortgage Underwriting,” pp.442-451</p> <p>OR:</p> <p>*Linneman [chapter 5, pp. 55-83] “Property Level Pro Forma Analysis” *Linneman [chapter 6] “Financial Modeling” *Linneman [chapter 9] “The Use and Selection of Cap Rates” *Linneman [chapter 15] “The Use of Debt and Mortgages” *Linneman [chapter 18] “Real Estate Exit Strategies.”</p> <p><u>Optional/Background</u> Geltner & Miller, Chapter 8: “Present Value Mathematics for Real Estate”, pp.155-172. Geltner & Miller, Chapter 9: “Measuring Investment Performance,” pp.177-194 Geltner & Miller, Chapter 13: “Use of Debt in Real Estate Investment: The Effect of Leverage,” pp.286-304 Berk and DeMarzo, <i>Corporate Finance</i>, chapter 3.3 and chapter 4: “The Time Value of Money.”</p>
<p>Class 2: (Friday, August 20, 5:15 p.m.– 7:15 p.m.)</p>	<p>Topic #2: Pro-forma valuation, continued.</p> <ul style="list-style-type: none"> - Leverage - Taxes 	<p><u>Watch before class:</u></p> <ul style="list-style-type: none"> - Amortization video <p><u>Required</u> BP: <i>Emerging Trends in Real Estate 2021</i>, chapters 1 and 3. BP: <i>Nine Abuses Common in Pro Forma Cash Flow Projections</i> Geltner & Miller, Chapter 28: “Investment Analysis of Real Estate Development Projects,” pp.732-753.</p>

		<u>Optional/Background</u> Geltner & Miller, Chapter 16: "Mortgage Basics I," pp.377-399
Class 3: (Saturday, August 21, 1:00 p.m. – 4:00 p.m.)	Topic #3: Sources of real estate risk Topic #4: Real estate markets, sectors, prices, and COVID Graded exercise handed out.	Graded exercise due on Canvas by September 30. <u>Required</u> BP: <i>Adjustment Mechanisms in Real Estate Markets</i> Geltner & Miller, Chapter 6.1: "Real Estate Market Analysis," pp.101-114. <u>Optional/Background</u> Geltner & Miller, Chapter 2: "Real Estate System," pp.24-37. Geltner & Miller, Chapter 7.3: "Perspective on the U.S. Institutional Property Market," pp.143-151. BP: <i>Superstar Cities</i>
Class 4: (Friday, October 1, 2:00 p.m. – 5:00 p.m.)	Topic #4: Real estate markets, sectors, prices, and COVID, continued Graded exercise discussion Case made available	Case due on Canvas by October 15.
Class 5: (Saturday, October 2, 9:00 a.m. – 12:00 p.m.)	Topic #5: Securitization of Debt Interests: Commercial Mortgage-Backed Securities (CMBS)	<u>Required</u> Geltner & Miller, Chapter 17: "Mortgage Basics II," pp.402-424 Geltner & Miller, Chapter 19.1: "Commercial Mortgage Economics and Investment: Some Basic Characteristics of Bonds," pp. 454-466 Geltner & Miller, Chapter 20: "Commercial Mortgage-Backed Securities," pp.481-506 BP: Gordon, "How to Build a Bond" BP: Cibelli, "Lord Abbett Investment Brief, CMBS 2017" BP: DiSalvo and Johnston, "Skin in the Game in the CMBS Market" <u>Optional/Background</u> BP: Chandan, "The Past, Present, and Future of CMBS" BP: Poindexter, "Defaults in Securitized Real Estate Loans"

Class 6: (Friday, October 15, 12:30 p.m. – 2:00 p.m. working lunch.)	Topic #6: REITs	<p><u>Required</u> Geltner & Miller, Chapter 23: “Real Estate Investment Trusts (REITs),” pp.573-598 BP: Harper, “Basic Valuation of a Real Estate Investment Trust” BP: Bohialian and Cheigh, “Buying the REIT Recovery in a Dislocated Market” BP: BofAML REIT Primer, 6th edition, pp. 1-7, 23-24</p> <p><u>Optional/Background</u> BP: Zell, “Liquid Real Estate” BP: <i>A Primer on US Equity REITS and their Role in an Institutional Investment Portfolio</i></p>
Class 7: (Saturday, October 16, 9:00 a.m. – 12:00 p.m.)	Case discussion Catch up on remaining course material	
Week following class	Exam	

Regrade Policy

We strive for accuracy and equity in the grading for this class. However, despite our 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 our attention.

The onus for bringing any errors to our 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.

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 forward it to us. (A PDF scan is okay.)

2) Our 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 us. Be sure to take the time to make sure you understand the errors you made before submitting the regrade request. Also, if an error is circled but no point deduction is noted, we did not take off points for it.

3) To aid your understanding of the material and of the grading philosophy, we 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 us. 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 we 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 rubric.

4) If you merely would like an explanation of the grading on an assignment, submit your assignment with a typed cover letter letting us know what you would like us to explain. We will set up a time to meet and we will explain it to you. Under no circumstances will we go over the grading of your assignment in “real time,” with no forewarning.

General policies:

1) We personally do all the regrades, in conference with the graders.

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) 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.

4) 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 we will correct any size error.