*University of Pennsylvania*
*The Wharton School*

# Introduction to Real Estate Investments
# REAL 723: 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.

Overall, 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.

## Course Materials:
**Textbook:** *Real Estate Finance and Investments, Third Edition*, by Linneman is required.
**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 print out the most current version shortly before class.

**Readings:** Available at Study.net, these fall into two categories:
  (a) Required readings
  (b) Recommended (but optional) readings
**Calculator:** You must have a financial calculator capable of computing annuities and present values. <u>You are responsible</u> for knowing how to use the annuity and present value functions. We will not cover them in class. You will need to be able to use those functions on the calculator for the exam.
**Handouts:** Occasional handouts will be distributed in class.

## *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 readings bulkpack. You should read them in advance of the class in which they are listed.
**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 <u>fundamental</u> 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. In addition, the exams will have a similar format to the practice problems.
**Old exams:** Some sample exam questions will be available on Canvas. We encourage you to do these in advance of the exam.

## *Cases:*

**Workload:** There will be one individual exercise and one group project.
**Distribution:** The exercise and case will be handed out in class.
**Teams:** You will choose your own case team of three to five 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 cases with other groups and give and receive assistance. However, each group must separately prepare their own case materials and write-ups. The exercise must be done independently without input from other students.
**Due dates:** The due dates will be listed on the assignments. **Late assignments will not be accepted nor will extensions be given.**

## *Grading:*

**Weights:** The course grade will be based on the following:
- Individual exercise: 50 percent
- Group case: 50 percent
**Attendance:** We will not explicitly grade your attendance in the class, but we will consider superb or sub-par class participation when deciding grades. This factor could account for

up to one-third of a letter grade.

**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:** Our policy on regrades is appended to the syllabus.

## *Classroom Expectations:*

**Be on time:** We will start on time and end on time.  Do not arrive late.

**Electronics:** You <u>may not</u> use smartphones, Blackberries, etc. You <u>may</u> use an iPad or other tablet, or a laptop, to read and annotate the class notes.

**Name tents:** We appreciate it if you display your name tents.

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

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

## *Getting help:*

**Canvas:** We 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, old exams, 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 probably best to email one of us and we'll schedule an appointment.

## *Disclaimers:*

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

# Course Schedule

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| Class 1<br>(Nov. 14) | Topic #1: Course requirements, class overview, and overview of real estate markets<br>Topic #2: Pro-forma valuation<br>   - NPV<br>   - Cap rates<br>   - Leverage<br>   - Taxes | Linneman, chapter 2: "What Is Real Estate?" pp. 12-35.<br>**\*Linneman, chapter 4:** "Property Level Pro Forma Analysis", **pp. 43-63**.<br>**\*Linneman, chapter 5:** "Financial Modeling"<br>**\*Linneman, chapter 7:** "The Use and Selection of Cap Rates"<br>**\*Linneman, chapter 13:** "The Use of Debt and Mortgages"<br>Linneman, "Prerequisite I: The Basics of Discounted Cash Flow and Net Present Value Analyses"<br>Linneman, "Prerequisite II: IRR: What It Is and What It Isn't"<br>Brealey and Myers, *Principles of Corporate Finance*, chapter 3: "How to Calculate Present Values." |
| Class 2<br>(Nov. 20) | Pro-forma valuation, continued.<br>**Graded exercise handed out.** | |
| Class 3<br>(Dec. 4) | Topic #3: Sources of real estate risk<br><br>Topic #4: Real estate markets and cycles | **Graded exercise due in-class.**<br>**\*Linneman, chapter 16:** "Real Estate Exit Strategies."<br>**\*Linneman, chapter 8:** "Development Pro Forma Analysis"<br>**\*BP #1**: *Emerging Trends in Real Estate 2016,* chapters 1-2.<br>**\*BP #2:** *Nine Abuses Common in* Pro Forma *Cash Flow Projections*<br>Linneman, chapter 11: "Real Estate Bankruptcy Basics"<br>Linneman, chapter 12: "Should You Borrow?"<br>Linneman, "Prerequisite III: Amortization Fundamentals"<br>OPT #1: *How Reliable Are Commercial Appraisals? Another Look*<br>**\*BP #3:** *Adjustment Mechanisms in Real Estate Markets*<br>**Linneman, chapter 20:** "Real Estate Cycles"<br>Linneman, chapter 9: "Development Feasibility Analysis"<br>OPT #2: *Superstar Cities*<br>OPT #3: *Will We Need More Office Space?*<br>OPT #4: *Living Downtown*<br>OPT #5: *Developer: Villain or Hero?*<br>OPT #6: *(When) Will We Do It Again?* |

| Class 4 (Dec. 5) | Topic #4: Real estate markets and cycles, continued. | |
| | Topic #5: Housing markets **Case #1 handed out** | |
| Class 5 (Dec. 18) | **Case #1 discussion** | **Case #1 due in-class.** **\*Linneman, chapter 14:** "Commercial Mortgage Backed Securities Basics" **\*BP #4:** *How to Build a Bond* |
| | Topic #6: Securitization of Debt Interests: Commercial Mortgage-Backed Securities (CMBS) | **\*BP #5:** CMBS Past, Present, and Future **\*BP #6:** *Defaults in Securitized Real Estate Loans* OPT #7: *The Mortgage REITs: Dynamos or Duds?* OPT #8: Commercial Mortgage Defaults 1972-2011 Linneman, "Supplemental II: A Look at a Real CMBS Issue" |
| Class 6 (Dec. 19) | Topic #6: CMBS continued | **\*BP #7:** *Basic Valuation of a Real Estate Investment Trust* **\*BP #8:** *A Primer on US Equity REITS and their Role in an Institutional Investment Portfolio* **\*Linneman, chapter 18:** "REITs and Liquid Real Estate" |
| | Topic #7: REITs | |

<u>Regrade Policy</u>

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 place both in my mailbox in SHDH.

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 <u>not</u> 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.

5)      Do not submit regrade requests by email.