EMBA Real Estate Finance (B7314)  
Summer 2017

Professor Christopher Mayer, Paul Milstein Professor of Real Estate; Finance and Economics  
The best way to contact me is by e-mail: cm310@gsb.columbia.edu.  
Office hours by appointment.

Teaching Assistant: TBA

Class Sessions Thursday evenings 6:00-9:00PM

Course Overview: Real estate accounts for one-third of the world’s capital assets. This course provides students with a comprehensive understanding of real estate valuation, cycles, markets, investments, and decision-making. The bulk of the course covers income-producing (commercial) property, although we will discuss residential housing. This course provides a unified finance-based framework to answer real estate investment decision-making problems encountered in the real world. Doing so requires a good understanding of the institutional features that differentiate real estate from other asset classes and markets as well as modern finance and economics tools. The class will have either a homework assignment or case due most weeks.

The course content will utilize, build on, and extend concepts covered in the following core courses:

<table>
<thead>
<tr>
<th>Core Course</th>
<th>Connection with the Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Finance</td>
<td>1. Time value of money</td>
</tr>
<tr>
<td></td>
<td>2. Risk</td>
</tr>
<tr>
<td></td>
<td>3. CAPM</td>
</tr>
<tr>
<td></td>
<td>4. Modigliani &amp; Miller Theorem</td>
</tr>
<tr>
<td></td>
<td>5. Arbitrage pricing and the law of one price</td>
</tr>
<tr>
<td></td>
<td>6. Efficient Markets</td>
</tr>
<tr>
<td></td>
<td>7. Financial frictions</td>
</tr>
<tr>
<td>Managerial Economics</td>
<td>1. Maximization and marginal analysis</td>
</tr>
<tr>
<td></td>
<td>2. Complex decision-making under uncertainty</td>
</tr>
<tr>
<td></td>
<td>3. Market competition and equilibrium</td>
</tr>
<tr>
<td>Managerial Statistics</td>
<td>1. Statistics and data analysis</td>
</tr>
<tr>
<td></td>
<td>2. Conditional probability</td>
</tr>
<tr>
<td></td>
<td>3. Modeling uncertainty</td>
</tr>
<tr>
<td>Global Economic Environment I</td>
<td>1. Inflation and monetary policy</td>
</tr>
<tr>
<td></td>
<td>2. The business cycle</td>
</tr>
<tr>
<td></td>
<td>3. The role of financial markets in the economy</td>
</tr>
</tbody>
</table>

Students will be expected to have mastered these concepts and be able to apply them in the course.

Course handouts: Class notes will be handed out in class and posted on Canvas. Readings,
homework exercises, and cases will be posted on Canvas.

**Reference book:** *Real Estate Finance and Investments: Risks and Opportunities* by Peter Linneman (4th Edition). The textbook is not required for the course, although it can help you understand and enhance material covered in class.

**Grading:** Your grade will be determined by assignments including individual homework assignments, three group cases, an exam, and class participation. The relative contribution of each of these components to the overall course grade is discussed below. Students wishing to have an assignment or exam re-graded must do so within two weeks of receiving the graded work. A submission for re-grading must be done in writing with an explanation of why the student feels that the grade was given in error. Re-grading will examine specific issues mentioned in the written submission.

**Assignments:** Written assignments jointly account for 60% of the overall grade, including the homework assignments (35%) and three group cases (25% total).

All assignments are due at the beginning of class since we often review the cases in-class the day they are due. Assignments must be turned in both on Canvas and also in writing in class. Anything not turned in on Canvas by the beginning of class (6 pm) will be considered late and will receive a 20% reduction. Assignments turned in after class will receive a 50% reduction. Assignments more than 24 hours late will not be accepted.

Homework assignments must be completed individually although you may discuss the assignment with other classmates. The sharing of written or computer work product among students for homework assignments is explicitly prohibited. Sunset Apartments will receive double weight in the final grade. The three cases will be completed in groups. While each group will make one submission and receive a group grade, all members of each group must be prepared to contribute to the class discussion of the case. Material in the assignments and cases may be covered on the final exam. The maximum size of any group will be four students. Please form groups and enter the names of your group members on Canvas prior to first case due date. Groups must complete their own work.

**Final Exam:** The final exam is worth 35% of the grade. It will be cumulative in nature, covering material from class sessions, handouts, guest speakers, homework assignments, and cases. Material covered in the readings will only be covered in the exam to the extent that it was covered in the class. It will be offered only during the final scheduled class session. Any
absences must be pre-approved by the Office of Student Affairs.

**Class Participation:** Class participation will account for 5% of your overall course grade. Questions are encouraged to clarify what we are discussing. In addition, you and your fellow students bring valuable perspectives to the class that can benefit everyone. Please remember that this is a large class and it is important that everyone has an opportunity to participate, so no one should dominate the conversation. Constructive comments in class will increase your participation grade, while consistently bad or irrelevant participation will decrease your grade. Please turn off cell phones and other electronic devices, etc. Absences or late arrivals will be considered as a factor in your class participation grade.

**Honor Code:** Students are expected to follow the honor code at all times, including rules for individual and group work. Violations of the honor code will result in referral to the Student Leadership and Ethics Board. See: [http://www8.gsb.columbia.edu/honor/resources](http://www8.gsb.columbia.edu/honor/resources).

*All classes will be videotaped to accommodate unavoidable business travel, but attendance is highly recommended as the readings do not completely cover the material in the course.*
OUTLINE AND ASSIGNMENTS
(Preliminary and subject to change prior to the first class)

Class 1, May 18: Course Overview and Requirements; Leases; Pro Forma Income and Expenses
Text: *Linneman*, Chapters 3 (The Fundamentals of Commercial Leases) and 4 (Property Level Pro Forma Analysis)

Class 2, May 25: Basic real estate valuation- cap rates; In-class discussion of “Comps”; Mortgage basics; Pro forma valuation metrics
Text: *Linneman*, Chapters 5 (Financial Modeling) and 7 (Use and Selection of Cap Rates); Other references (on canvas): Note on Cap Rates (by Professor Neng Wang) and Chapters 16 & 17, *Geltner and Miller*

Class 3, June 1: Discuss *The Enclave at Westchester*; Determining the appropriate discount rate; Replacement cost; Capital Expenditures; Real Estate Risk and Volatility; Managing Risk
Assignment: HW #1, *The Enclave at Westchester*
Text: *Linneman*, Chapter 6 (Real Estate Due Diligence)

Class 4, June 8: Real Estate Taxes; Leverage in Real Estate and its Impact on Risk and Return; Law of One Price; Subordinate Debt and Mezzanine Financing
Text: *Linneman*, Chapters 12 (Should You Borrow?), 13 (The Use of Debt and Mortgages), and 20 (Real Estate Cycles)

Class 5, June 15: Discuss *Sunset Apartments*; Guest Speaker; Mezzanine Financing in-class example
Assignment: HW #2, *Sunset Apartments Case*

Class 6, June 22: Discuss *Duke and Byline*; Debt default decisions over time; Financing beyond plain vanilla
Assignment: Case 1, *Duke and Byline* (group case assignment)

Class 7, July 6: Land development and valuation; Ground leases; Commercial Mortgage Backed Securities (CMBS)
Text: *Linneman*, Chapters 14 (Commercial Mortgage Backed Securities) and 15 (Ground Leases as a Source of Finance)

Class 8, July 13: Real Estate Investment Trusts (REITs); Corporate real estate; Real Estate Private Equity
Assignment: HW #3, *Valuation and Leases*
Text: *Linneman*, Chapters 18 (REITs and Liquid Real Estate) and 19 (Corporate Real Estate Decision Making)
**Class 9, July 20:** Guest Speaker; Discuss 1800 L Street Case  
**Assignment:** Case #2, *1800 L Street* (group case assignment)  
**Text:** *Linneman*, Chapter 17 (Real Estate Private Equity Funds)

**Class 10, July 27:** Understanding Housing Markets; Should you Buy, Rent, (or Invest in) a Home?  
**Assignment:** HW #4: Home purchase assignment

**Class 11, Aug 3:** Discuss Graybar Case; Review Class  
**Assignment:** Case #3, *Graybar* (group case assignment)

**Class 12, Aug 10:** In Class Final Exam