Real Estate Finance (B7314)
Summer 2016

Professor Christopher Mayer, Paul Milstein Professor of Real Estate; Finance and Economics
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Office hours by appointment.

Teaching Assistant: TBD

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

Core Course	**Connection with Core**
Corporate Finance	1. Time value of money 2. Risk 3. CAPM 4. Modigliani Miller Theorem 5. Arbitrage pricing and the law of one price 6. Efficient Markets 7. Frictions
Managerial Economics	1. Maximization and thinking on the margin 2. Analyzing complex decision-making under uncertainty 3. Understanding market competition and equilibrium thinking
Managerial Statistics	1. Statistics data analysis 2. Probability intro 3. Conditional probability 4. Modeling uncertainty
Global Economic Environment I	1. What causes inflation 2. What drives employment 3. What are the causes of business cycle 4. What are the effects of monetary policy 5. What is the role of financial markets in the economy

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)
This book provides background material and context for many of the concepts 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 homework assignments/individual cases (35%) and three group cases (25% total).

All assignments are due at the beginning of class. Assignments must be turned in both on Canvas and also in writing in class. Anything not turned in on Canvas after the beginning of class time (6 pm) will be considered late and will receive a 20% reduction. Assignments turned in after class ends will not receive credit.

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. Homework assignments will either receive a numeric grade for longer assignments or a "0/check minus/check/check plus" grade. Longer homework assignments will receive additional weight in the final grade (Sunset Apartments). 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, including their group's answer to the questions posed in the case. Material covered by the assignments, including details of the cases, may be covered on the exams. 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 the third class session. Groups must complete their own work.

***Exam*:** The exam is worth 35% of the grade. It will be comprehensive in nature

and will cover material from all of the class sessions, all of the course pre-readings, and all of the course exercises and cases. It will be offered only during the final scheduled class session. Any absences must be pre-approved by the Office of Student Academic Affairs.

Class Participation: Class participation will account for 5% of your overall course grade. Class discussion is only as good as you and your fellow students can make it. 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 (including the instructor). The course is cumulative, so being lost can also become a challenge. Constructive comments in class will increase the participation points. Naturally, consistently bad or irrelevant participation will decrease the participation points. Please turn off cell phones and other electronic devices, etc. Absences or late arrivals will be considered as a factor in class participation. Materials covered by guest lecturers are required. Classes will be videotaped to accommodate unavoidable business travel, but participation is not possible via videotape.

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.

OUTLINE AND ASSIGNMENTS

Class 1, May 18: Course Overview and Requirements; Leases; Pro Forma Income and Expenses

Class 2, May 25: Cap Rates: Valuation and Volatility; Other Real Estate Risks; Introduction to Mortgage Analysis
Assignment: Reading/Canvas, Linneman text

Class 3, June 1: Discuss HW #1; Use of Leverage in Real Estate and its Impact on Risk and Return; Law of One Price; Discuss The Enclave at Westchester Determining Appropriate Discount Rate
Assignment: HW #1, The Enclave at Westchester

Class 4, June 8: Capital Expenditures; Real Estate Taxes; Guest Speaker: TBD; NOTE: CLASS MAY BE MOVED TO EVENING OF JUNE 9 TO ACCOMMODATE SPEAKER (will be videotaped)
Assignment: Reading/Canvas, Linneman text

Class 5, June 15: Discuss Sunset Apartments; Subordinate Debt and Mezzanine Financing
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 assignment)

Class 7, June 29: Land Development and Valuation; Ground Leases; Commercial Mortgage Backed Securities (CMBS); Corporate real estate
Assignment: Reading/Canvas

Class 8, July 6: Real Estate in the Public Markets: and Real Estate Investment Trusts (REITs); Guest Speaker: TBD; NOTE: CLASS MAY BE MOVED TO EVENING OF JULY 7 TO ACCOMMODATE SPEAKER (will be videotaped)
Assignment: HW #3, Mortgage Valuation and Decision Making

Class 9, July 13: Real Estate Private Equity; Discuss 1800 L Street Case
Assignment: Case #2, 1800 L Street (group assignment)

Class 10, July 20: Understanding Housing Markets; Should you Buy, Rent, (or Invest in) a Home?
Assignment: HW #4: Home purchase assignment

Class 11, July 27: Discuss Graybar Case; Review Class
Assignment: Case #3, Graybar (group assignment)

Review Session, August 1 (7 pm): Review session with student-led questions for the Exam.

Class 12, Aug 3: **In Class Exam**