

# 11.431J/15.426J: Introduction to Real Estate Finance & Investments: Micro-Level Fundamentals

Fall 2012, MIT Center for Real Estate (9-354), Lectures 4:00-5:30 T,Th, Recit.5:30-7:00 T

<b>Instructor:</b>	Professor David Geltner (Office 9-325, Center for Real Estate)
<b>Office hours:</b>	3:00-4:00 T,Th or by appointment (email, voicemail anytime)
<b>Teaching Assistants:</b>	Jason Foster
<b>Prerequisites:</b>	Course open to graduate students only, by permission of instructor
<b>Course website:</b>	<a href="https://stellar.mit.edu/S/course/15/fa12/15.426">https://stellar.mit.edu/S/course/15/fa12/15.426</a>

**Course description & objectives:** This course is an introduction to the most fundamental concepts, principles, analytical methods and tools useful for making investment and finance decisions regarding commercial real estate assets. As the first of a two-course sequence, this course will focus on the basic building blocks and the “micro” level, which pertains to individual properties and deals (as distinguished from the “macro” level that pertains to portfolio, firm level, and investment management considerations – the macro level will be covered in 11.432 spring H1). This course will consider investment in both “stabilized” (fully operational) income properties, and development projects. Our perspective will be that of so-called “institutional” real estate decision-making (professional investors, e.g., pension funds, REITs, private equity funds, financial firms), regarding large-scale commercial property. At this level it is important to integrate the perspectives of “Wall Street” (the mainstream securities investments and corporate finance establishment) and “Main Street” (local, traditional real estate business community). This requires a treatment of real estate investment rigorously integrated with, and built upon, the modern corporate finance and investments perspective as taught, for example, in the Brealey-Myers text in the Sloan introductory finance theory curriculum (15.401). However, a key objective of this course is to recognize the unique features of real estate that distinguish it from so-called “mainstream” securities investments and corporate finance.

Sloan and other students taking this course as an elective should understand that this is a required course in MIT’s MSRED program core and, as such, is taught as a “core” subject. That is, a large body of material is covered in a short amount of time, aimed at students who do not necessarily have much finance background. This precludes primary reliance on the case method as is done for example in the Harvard Business School and many Sloan courses. However, we will focus on several HBS cases in much greater depth than is done in the HBS. This is a rigorous, analytical course that involves intensive quantitative analysis (particularly using Excel spreadsheets). This course involves considerable workload, and students whose time is tight should consider listener status.

**Administration/Recitations:** In addition to twice-weekly lectures, there will generally be weekly recitation classes. These will be used to review the material presented in lecture and the text, and in some cases as extensions to the class to allow more complete coverage of case and project assignments. The teaching assistants will serve as the graders (with appeals to the primary instructor). Recitation attendance is advisable for most students, but is not mandatory.

*No Open Laptops in Class, Turn Cell Phones Off (or “Airplane Mode”), Please (unless specified).*

However, laptops will be used extensively in the recitations.

## Grading:

- There will be 4 brief quizzes, one at the end of each of the four modules of the course, totaling 60% of the course grade.
- There will generally be short written or computational assignments due at the beginning of most classes, focusing on the case that is being covered and/or related problems. These written assignments (which may be Excel workbooks) will be graded on a check/check-minus/incomplete basis (primarily based on apparent effort) and in total will count for 20% of the course grade. Students may work in groups of up to 4 students each on the daily assignments, but please mix up the group compositions from time to time so you don’t just work with the same couple people all the time.
- The final 20% of the course grade will reflect in-class participation and contributions in the course Stellar Discussion Forum. At a minimum, each student is expected to make at least one post to the forum (either a question or a response), during each of the four modules in the course. The post does not need to be great – they will not be graded on content – but they do need to be genuine and relevant to the course, though they can be “out of the box” or creative. (And there is no such thing as a “dumb question”.) The forum will be monitored by the instructor and the TAs, and this will be treated as an important part of the learning process in the course.

## Required Materials:

**Text:** (required) D.Geltner, N.Miller, J.Clayton & P.Eichholtz, “Commercial Real Estate Analysis & Investments, 2<sup>nd</sup> Edition”, South-Western College Publishing Co., Cincinnati, 2007 (ISBN# 0-324-30548-6).

**HBS Cases:** We will be using three HBS cases that you can purchase online (see course website for details). The fourth case is our own and will be provided.

**Calculator:** A financial calculator is required, of a type that can do discounted cash flow and internal rate of return calculations (DCF, IRR). The Hewlett-Packard HP-10B will be used for in-class examples. (App available for iPhones.)

**11.431J/15.426J: Real Estate Finance & Investments I, Fall 2012 Current Schedule (check Stellar for updates)**

**Version 8/15/12**

Note: Lecture notes in PowerPoint will generally be available on the course Stellar website prior to the lecture (with minor modifications possibly posted after the lecture).

<b>Class</b>	<b>Topic:</b>	<b>Date</b>	<b>GM Ref (2e):*</b>	<b>Recitation</b>
1	Introduction	9/6 Th	Ch.2, Especially pp: 21-25.	
2	Module 1: Urban Economics for RE Investment Walden Woods Case Space markets	9/11 T	Chs.1 Esp: 3-11, 14-15.	PV math, xls & calcs
3	Walden Woods Case HBU & Urban Dynamics	9/13 Th	Chs. 4-5 Esp: 62-65, 79-84,89-99	
4	Walden Woods Case Urban Dynamics (cont.)	9/18 T	Sects. 4.2, 5.3, 5.4 pp: 66-76, 84-99	Urban econ coaching
5	Walden Woods Case Property Life Cycle (depreciation) RE Devlpt Project Economics (beginners level)	9/20 Th	Sects.5.4, 8.2.2, 29.3.1 pp: 95-99, 157-158, 794-797	
6	Real Estate Market Analysis	9/25 T	Ch. 6 Esp: 104-113	coaching for quiz.
7	Quiz on Module 1, Begin Module 2: Basic Micro-Level Investment Decision	9/27 Th	Ch.1 & 7: Esp: 11-16, 134-141	
8	IBET Case DCF Valuation of Property	10/02 T	Chs. 10-11 Esp: 202-206, 211-214, 235-249	Coaching for Module 2
9	IBET Case Valuation (cont.) & Sensitivity Analysis, performance attribution.	10/04 Th	Chs. 10-11 Esp: 221-225. Ch 26 (690-693 only).	
10	IBET Case Direct Capitalization, Investment Analysis (NPV), & Performance Attribution (including benchmarking)	10/11 Th	Chs 10 Esp: 208-211, 214-220; 249-258	
11	OCC (disc rate)	10/16 T	Chs 11, 26 pp. 249-258	Coaching re DCF, Perf Attribn, Sens Ana (Data/Tbl), Unbundling.
12	Investment Value & Market efficiency	10/18 Th	Ch.12 pp.264-276	
13	Comm Mortg Undrwrng  Begin Module 3: Completing the Micro-level Investment Analysis: Debt & Taxes	10/23 T	Ch.17,18 pp.407-413,448-456 Ch.14, pp.319-327	Quiz Review, Coaching for Module 3
14	Angus Cartwright Case Typical Current Practice in After-tax Levered Investment Analysis; Cash Flow Components after-tax DCF.	10/25 Th	Chs. 14, pp.319-330.	
15	Quiz on Module 2 (classes 7-13) Angus Cartwright Case Leverage & the Security Market Line	10/30 T	Ch 13 All: 297-314	Ch 14 coaching Excel file synchronization Q&A for ULI absentees
16	Angus Cartwright Case Realistic Investment Analysis by Cash Flow Components & the PBT shortcut	11/01 Th	Ch 14 Esp: 327-333 (Rev 10.4.1, 11.1, 10B)	
17	Angus Cartwright Case After-tax Valuation of Debt, APV	11/06 T	Ch 14 Esp: 333-341	Ch 14 coaching Excel file synchronization
18	Angus Cartwright Case Investment Value & SML	11/08 Th	Chs. 12 13 14 Esp: 264-272, 342-349, 305-307.	

19	Catch up & Review for quiz	11/13 T		Review for quiz
20	Quiz on Module 3, Begin Module 4: Intro to RE dvlpt; Loan default yield degradation & expected returns to commRE mortgs.	11/15 Th	Ch.28 Esp: 757-769 Ch.18 Esp: 439-448	
21	Lincoln Case Real estate dvlpt (RED) process intro (focus on finance)	11/20 T	Ch.28 Esp: 757-769	TBA
22	Lincoln Case Development Project (NPV&OCC)	11/27 T	Ch. 29 Esp: 779-792	TBA
23	Lincoln Case Devlpt Financing, Multi-tier project capital structure	11/29 Th	Ch 15 Esp: 366-380	
24	Scenario analysis	12/04 T		Cap structure (splits analysis), quiz coaching
25	Catch up & Review (or TBA)	12/06 Th		
26	Module 4 Quiz	12/11 T		No recitation
	<b>No Final Exam</b>			

\*Referenced book chapters are a bit scattered, not always in the order they're presented in the book, because the course is structured around realistic cases, and in the real world, real estate investment deals relate simultaneously to many different aspects of finance and investments theory.