NEW YORK UNIVERSITY
Stern School of Business

Department of Finance

Spring 2012

REAL ESTATE FINANCE
FINC-UB.0039.01  (C15.0039.01)

DR. FRANK LEIBER
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REAL ESTATE FINANCE

SPRING 2012
SYLLABUS

Course Number: FINC-UB 39.001
Days: Wednesdays
Times: 6:20 – 8:50 PM
Location: All classes are held at T-LC21
Dates: January 25-May 7, 2012
No Classes: There will be no class on March 14 (Spring Break)
Teaching Assistant: TBA
Office Hours: by appointment
Course website: Blackboard (http://sternclasses.nyu.edu)

Course Objectives:
Prerequisite: C15.0002 (Foundations of Financial Markets).
Co-requisite: C15.0007 (Financial Management).
Covers theory and measurement of return and risk on real estate financial decisions. Topics include loan valuation theory, determination of future costs, discounting procedures for cash flows of income-producing properties, and utilization of negative cash flows. Finance theory is applied to real estate decisions regarding land subdivision, property development, lender strategies, and the role of government agencies in real estate.
(From the catalog description http://w4.stern.nyu.edu/finance/docs/pdfs/Bulletin_UG.pdf)

This ‘Real Estate Finance’ course takes the perspective of decision makers analyzing and selecting real estate capital projects, and we will focus primarily on topics associated with financing real estate property investments and raising capital in the ‘primary markets’ while integrating risk and expected return in a rigorous capital structure framework.

These topics include choosing the degree of leverage and the impact of risk on the hurdle rate and the expected return of debt and equity, the importance of financial projections and cash flow forecasting on the cost of debt, the valuation of real estate specific financial instruments such as a variety of mortgages, negative amortization, the effect of prepayment penalties on the effective cost of debt etc. We will also discuss important ‘private market’ financing structures such as real estate partnerships, with their unique distribution rules of cash flows from operations and reversion.

In this course, students refine their understanding of analytical valuation techniques and risk measures; and they apply this knowledge by structuring appropriate financing requirements for income-producing real estate development projects and investments in existing properties. Students will deepen their mastery of discounted cash flow analysis and extend the NPV criterion in an important way through an introduction to real options, sensitivity, scenario and simulation techniques to deal with risk, and examine the key measures for credit risk and underwriting criteria in real estate financings.
An important **prerequisite** of this course is ‘**Foundations of Financial Markets**’, C15.0002, that develops the basic concepts and tools of modern finance, in particular risk and return, as well as a solid understanding how financial markets work and how different kinds of financial instruments are valued.

Ideally, the **co-requisite** ‘**Financial Management**’, C15.0007, required for finance majors, has been successfully completed by the student prior to attending this class. I will do my best to guide students who take the Financial Management course concurrently with this class, which applies many important subjects from corporate finance to commercial real estate.

**Honor Code**: New York University promotes an ethical learning environment and ensures that all students understand the concepts of academic integrity. This is an extremely important issue for the duration of the students' time at NYU, but also for the time after graduation. Hence all students are required to familiarize themselves with the Statement of Academic Integrity and the NYU Stern Undergraduate College Student Code of Conduct, which mandates zero tolerance for cheating: [http://w4.stern.nyu.edu/uc/currentstudents/codeofconduct.cfm?doc_id=5599](http://w4.stern.nyu.edu/uc/currentstudents/codeofconduct.cfm?doc_id=5599).

Please read this carefully and make sure that you follow it whenever you submit any work for this course. Also realize that there are a number of penalties associated with violating the Statement of Academic Integrity and the Code of Conduct; they range from failure for a paper or course to dismissal from the University.

At his url: [http://w4.stern.nyu.edu/citl/articles.cfm?doc_id=3396](http://w4.stern.nyu.edu/citl/articles.cfm?doc_id=3396), you find additional links to meta-teaching issues on Academic Honesty, Civility in the Classroom, Copyright/Fair Use, Diversity, and How People Learn.

**Disabilities**: If you are a student with a qualifying disability and require academic accommodation during this course, please ask the Moses Center for Students with Disabilities (tel: 212-998-4980) to provide the instructor with a letter verifying your registration and the recommended accommodations. Note that if you need to take an exam at the CSD, in order to be guaranteed accommodation, you must submit a completed Exam Accommodations Form to them at the latest one week prior to the scheduled exam time.

**Communication skills**: It is increasingly important that financial practitioners know how to communicate their analysis. In order to hone professional writing and speaking skills, this course requires students

- to interact with their peers during the preparation of classes and
- to demonstrate their ‘persuasive communication’ abilities in speaking and writing

All NYU students can readily ask for help with writing skills from ‘The Writing Center’ at NYU's Expository Writing Program in the College of Arts and Science. For further details, please visit [http://www.nyu.edu/cas/ewp/html/writing_center.html](http://www.nyu.edu/cas/ewp/html/writing_center.html)
Required Book:


Recommended Books:


Spreadsheet modeling skills are an integral part of the rigorous education in finance provided at Stern School of Business. While you will not become expert EXCEL programmers, this course will enable you to learn practical finance by answering questions in a spreadsheet environment. Being able to DO finance (rather than talking ABOUT finance) is even more important as a competitive skill in the present challenging employment environment. Furthermore, since finance cannot be mastered by merely reading textbooks or by listening to lectures, I will encourage you to form study groups and to collaborate on EXCEL instead of distributing spreadsheet templates.

Benninga’s book is ideally suited to refreshing your EXCEL techniques in finance, to guide you through practical problems such as we will study in this course, and to introduce you to more advanced financial applications that you will encounter as a graduate in the future.

Supplementary Readings: Handouts, articles, additional exercises, review material and all other relevant communication will be posted on the Blackboard website for this course.

Course Structure: This course gives you the opportunity to meld previously gained knowledge in realistic and sophisticated real estate applications with important new analytical tools, and the course structure reflects the variety and depth of subject material covered:

*Preparation time* involves review, background reading, and problem solving using EXCEL and WORD for the write-ups. You must study in teams (of no more than three individuals), to be formed by the second week of the course. You are allowed to hand-in 1 exercise per team, in which each team member will receive the same grade. It is up to teams to manage their own internal dynamics and to expel a ‘free-rider’.

*Classroom time* consists primarily of discussions of concepts and occasional review of assignments. Students will be regularly called upon to present their analysis in-class and to relate it to previously studied materials.

Assignments: All students are expected to pursue and meet the highest standards of academic excellence by adhering to the norms of a serious intellectual community. If you are unclear about the rules and styles of citation, please read the section “Bibliography and Footnote Style Guide” and follow the resources listed at [http://library.nyu.edu/research/bibliographies](http://library.nyu.edu/research/bibliographies).

Each assignment must take the form of a professional communication: a document in WORD that conforms to formatting standards, that is easy to read (double-spaced), and that includes bibliographic references and all supporting models.
The structure of a professional communication opens with an executive summary, followed by a succinct description of the project/assignment, then the body of your analysis with a clearly articulated commentary, accompanied by excerpts and graphs imported from the supporting analytical models, which you may have to create and which you must append to the assignment.

If you are asked to ‘replicate’ a table or results presented in a textbook, for example, you cannot merely ‘copy the numbers’ from the source, but you must first create the underlying EXCEL model.

Compelling narrative, neatness, organization, logic, clarity, grammar, punctuation, and spelling of each assignment are important elements to impress me, your colleagues, your bosses and your clients…

**Grading, Exercises and Examinations:** Throughout the semester, you can check your understanding of the material by doing the weekly exercises. This weekly assessment is complemented by a midterm exam and short, unannounced, in-class quizzes.

**Grade Distribution:** Grading is based on the class curve rather than the total number of points and adheres to the grading curve set by the Finance department. The professor has no control over this curve, which is distributed approximately as follows:

A: (A, A-) 25%
B: (B+, B, B-) 50%
C: (C+, C, C-) 20%
D and F: 5% (earned by the student who has not handed in assignments nor taken exams)

Grading criteria are as follows:

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<th>Component</th>
<th>Points</th>
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<tr>
<td>Assignments and writing</td>
<td>20</td>
</tr>
<tr>
<td>Midterm exam</td>
<td>20</td>
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<tr>
<td>Quality of class participation</td>
<td>10</td>
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<tr>
<td>In-class quizzes</td>
<td>20</td>
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<td>Final exam</td>
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**TOTAL** 100 points

**NOTE:** There is no make-up exam for the midterm. All exams and quizzes are closed book.

**Attendance:** Students are expected to attend each class and be on time. Constructive, knowledgeable, courteous and active class participation is required and carries 10% of the final grade in the course. The classes will start on time, attendance will be taken at the start of each session, and if you are late or have missed a session, please inquire with members of your study team, outside of class-time, about what you missed. It is very disturbing to your colleagues if you come in late, so chronic latecomers will be penalized.

Absences may be excused only in the case of documented serious illness, family emergency, religious observance, or civic obligation. Recruiting activities and other NYU-related events are not acceptable reasons for class absence. You must notify instructor and teaching assistant as soon as possible if it appears likely that you will miss class for an extended period of time due to illness or another reason.
Electronic devices: Cell phones, ‘smartphones’, ‘uphones’ and all other electronic devices must be switched off during class sessions, as they are highly distracting and negatively impact class discussion. I will ask the IT department to record our sessions for students who wish to review the material discussed.

Nameplates: Please bring your nameplates to every session to facilitate a pleasant interactive atmosphere, and so I can remember whom to credit for exceptionally high quality contributions. You can print your name in large font and fold the (landscape) printout to create a ‘paper tent’.

Tidy Classroom: At the end of each session, please clean your desk and put any refuse in the classroom bins. As much as you expect to find a clean desk at the start of each session, it is important to exercise the same consideration to your student colleagues in the next class as well as to Stern staff.

Deadlines: Each assignment (the WORD write-up as well as any supporting EXCEL model and data) is due by e-mail 24 hours prior to class meetings. The TA will determine whether a hardcopy of each assignment is due at the beginning of the class on each class meeting date (specified in the “SCHEDULE” below).

This course is an opportunity to enhance your analytical prowess to new heights, to polish your written and verbal presentation and communication skills, and to have fun in a polite atmosphere. In this class, you are rewarded for asking intelligent questions - - and you will not lose your client (or your job) if you make a mistake…

My goal is to provide you with the chance to demonstrate your ‘mastery and/or proficiency of core and ancillary material comprising the course’, by submitting work ‘in a condition that could be used confidently in a professional setting with virtually no modification’ (quoted from NYU’s “Qualitative Standards for Grades” to earn an “A” )

Welcome again and good luck!
<table>
<thead>
<tr>
<th>Week # and Dates</th>
<th>Topic</th>
<th>Background readings (must be completed prior to class session)</th>
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</table>
| 1 January 25     | 1) Introduction to course  
2) Overview of risk and opportunities in real estate, and property level pro-forma analysis  
3) Legal concepts in RE Finance | Chapters 1, 2 and 3 |
| 2 February 1     | 1) Review of TVM, IRR, NPV, and compound interest conventions for RE | Chapters 2 and 3 |
| 3 February 8     | 1) Fixed rate mortgages  
2) Adjustable rate and variable payment mortgages | Chapters 4 and 5 |
| 4 February 15    | 1) Topics in residential financial analysis: pricing, tax considerations, default risk, underwriting and financing residential properties; the role of government agencies in the subprime crisis | Chapters 6-8 |
| 5 February 22    | 1) Introduction to leases and the market for space  
2) The market for capital and raising funds for income-producing properties: introduction to valuation | Chapters 9 and 10 |
| 6 February 29    | 1) Finish valuation of income properties: further insights into appraisal methods and cap rates compared to DCF  
2) Impact of taxation on value of income property | Chapters 10 and 11 |
| 7 March 7        | 1) Introduction to financial leverage, structuring financing alternatives  
2) The insights of Modigliani and Miller, and understanding the optimal capital structure for CRE | Chapters 11 and 12 Handouts |
| 8 March 21       | 1) Risk analysis and introduction to scenario, sensitivity and simulation analysis  
2) Extending the NPV criterion by valuing flexibility: introduction to real options | Chapter 13 |
| Page 9 | March 28 | 1) Exit strategies and reversion value  
2) Refinancing and renovation as alternatives to disposition | Chapter 14 |
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<td>Page 10</td>
<td>April 4</td>
<td>1) Financing Commercial Real Estate Development Projects</td>
<td>Chapter 16</td>
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| Page 11 | April 11 | 1) Financing Commercial Real Estate Development Projects  
2) Financing Land Development Projects | Chapters 16 and 17 |
| Page 12 | April 18 | 1) The cost of debt: CRE credit risk analysis in the cash flow and asset volatility perspectives  
2) Structuring external sources of capital to deal with business risk | Handouts |
| Page 13 | April 25 | 1) Alternatives to commercial loans: raising funds through joint ventures, syndications, private equity funds, and partnerships; distribution rules of cash flows from operations and reversion | Chapter 18 and Handouts |
| Page 14 | May 2 | 1) When plans go awry: capital restructuring of distressed commercial real estate and financing turnaround strategies | Handouts |
| Page 15 | May 9 | Final Exam | |

### Spring 2012

**FINC-UB 39** | 3 units | **Class#:** 1053 | **Session:** 01/23/2012 - 05/07/2012 | **Section:** 001  
**Class Status:** Open | **Grading:** Ugrad Stern Graded  
**Course Location Code:** WS | **Component:** Lecture  
01/23/2012 - 05/07/2012 Wed 6.20 PM - 8.50 PM at TISC LC21 with Leiber, Frank  
**Notes:** PREREQUISITE: C15.0002 OR C15.9002. COREQUISITE: C15.0007. SAME AS B40.2339. Co-Requisite FINC-UB 7 (Corporate Finance)

[Link to course page](https://admin.portal.nyu.edu/psp/paprod/EMPLOYEE/CSSS/c/NYU_SR.NYU_CLS_SRCH.GBL?PORTALPARAM_PTCNAV=NYU_PUBLIC_CLASS_SRCH&EOPP.SCNode=EMPL&EOPP.SCPortal=EMPLOYEE&EOPP.SCSName=NYU_PUBLIC_ALBERT&EOPP.SCLabel=Public%20Albert&EOPP.SCPTcname=&FolderPath=PORTAL_ROOT_OBJECT.PORTAL_BASE_DATA.CO_NAVIGATION_COLLECTIONS.NYU_PUBLIC_ALBERT.NYU_S201001131343518906160410&IsFolder=false)