



Summer 2018 (I)

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## **REAL ESTATE PRIMARY MARKETS**

### **Course Syllabus**

#### **Course Description**

This course provides an introduction to the physical real estate market in the US. It provides an overview of both residential and commercial real estate markets and presents an analytical framework that covers different aspects of decision making such as financing, taxation, accounting, appraisal and development of real estate.

While the business of owning and financing real estate in general is steeped in processes and procedures, this course is designed to focus more on the underlying financial analyses that are necessary to make meaningful decisions. Decisions are evaluated from several different perspectives (of an owner, a developer, a tenant or a lender).

Though the course is designed mainly for students who are interested in pursuing real estate as a career, it is structured also to provide a strong foundational knowledge for making intelligent personal investment and financing decisions concerning real estate. Given the primary role played by real estate markets in the recent financial crisis, it is important for both end users and investors to be able to understand the risks and return tradeoffs in these markets.

Students are expected to have working knowledge of corporate finance, accounting and investments though knowledge of real estate markets itself is not a prerequisite (see section below on pre-requisite). They are also expected to get their hands dirty by solving problems simulating real life decisions, both in class as well as through homework assignments. Students will be exposed to both real estate terminology as well as to the various institutional details throughout the course in addition to linkages to real world events and current academic research.

#### **Course Layout**

The course is roughly divided into *five* (5) distinct modules, with the first module being introductory as it sets the background and context for the rest of the modules. It also includes a quick refresher on cash flow valuations which is critical for the rest of the course. The second module covers the mortgage mathematics using fixed rate and floating rate loans. The third and fourth modules deal with valuation and investment aspects of existing properties, both residential (single family homes) as well as commercial real estate (income producing properties such as office, retail etc.). The fifth

and final module covers issues related to the development of new properties. Each module could be spread over one or more full-day sessions. The detailed breakup of the topics covered in each of these modules is given separately below.

### **Course Pre-requisite**

Foundations of Finance (COR1-GB.2311)

### **Course Materials**

The *required* textbook for the course is:

Title: Real Estate Finance and Investments  
Author(s): William B. Brueggeman and Jeffrey D. Fisher (“BF” hereafter)  
Edition: 16th Edition (2011)  
Publisher: McGraw-Hill Irwin

In addition, I will distribute lecture notes in advance as well as any supplemental learning material that will aid your understanding of the key concepts. Problem sets will be posted on our course website and are due on dates mentioned in the schedule provided below.

### **Course Website**

The following is the link to our class website: [Class Site](#). All materials and communication related to our course will be posted there. In case you are not able to access the above link, use this one: (<https://newclasses.nyu.edu/portal/site/67a0842a-a85b-493e-b68e-fd067023ad83>).

### **Grading**

There will be *three* components to your final grade: problem sets to be solved individually, mid-term examination and a final examination. Basic grading will be relative and is based on the student’s normalized performance across his peers. NYU has strict guidelines on the relative grading curve that are described below.

*Problem sets:* Through the course, there will be *two* problem sets that will be handed out (and posted on course website), which need to be completed by the student and handed back within a stipulated time. The problems will test your understanding of key concepts and may not completely mirror examples done in class. Students are expected to work on these problems independently but can seek help from others provided such assistance is explicitly acknowledged at the top of the completed problem sets. I discourage extensions for problem set submissions but will consider exceptions on a case to case basis.

*Mid-term examination:* The mid-term exam will be an in-class exam on topics covered up until the exam. I will announce those topics in class as well as on our class website. The duration of the mid-term exam will be for an hour and a half.

*Final examination:* The final examination will be a cumulative exam that will test your understanding of concepts taught over the entire course. The duration of the final exam will be around 2 hours.

*Additional exam information (applicable to both mid-term and final exams):*

- The exams will include a combination of multiple-choice questions and short answer problems, similar to those that appear in problem sets and in class examples. Detailed working (including key steps for the solution) is required to get full points.
- The exams will be closed book but you are allowed to bring in *one* page (8 ½ x 11, double-sided) of formulas and notes for mid-term and *two* pages for the final exam. I reserve the right to ask some or all of you to turn in their formula sheet(s) along with your exam.
- All exams will be during regular class sessions after which we will continue with lectures.
- Students who miss taking the exam without my prior approval will not be offered any chances for a makeup.
- You will be allowed use of a non-programmable, financial calculator.
- Students with disabilities need to arrange for additional accommodation prior to these exams.

To sum up, the final grade will be determined as follows:

- |                        |     |
|------------------------|-----|
| • 2 Problem sets       | 30% |
| • Mid-term examination | 30% |
| • Final examination    | 40% |

The final letter grade for this course will follow the guidelines set by the Stern Finance department which recommend a maximum of 35% of students to receive either an “A” or “A-” grade.

Request for incomplete grades must be made before the last day of class. I reserve the right to accept such a request and any incomplete grade, if granted, must be taken care of by the student within the university’s time guidelines.

### **Class Timings and Location**

The class meets *once* per week on Saturdays between 9:00 am to 4:00 pm over a period of 6 weeks.

### **Teaching Assistant (TA)**

There is no teaching assistant currently assigned for this course. If I decide to have one later, I will forward the TA’s details by email.

### **Calculator**

The course requires extensive use of Excel or a financial calculator. For in class problems and for exams, you need a calculator while homework problems can be solved using Excel. Knowledge of ARGUS software is not needed though it would be an advantage for those who are interested in pursuing a real estate career.

### **Requirements from Students**

Clearly there is no substitute for attending and participating in class. Your inputs, be it discussion of a real world case study or a clarification of a concept, will vastly improve the quality of our interaction and would make learning more enjoyable. While formal attendance is not required, you will be highly disadvantaged even if you miss one session given the short and packed structure of this course.

I encourage students to also try out end-of-chapter problems from the textbook as only practice will solidify your understanding. I will suggest such problems from time to time, the solutions for which are not required to be submitted.

### **Code of Honor**

As a student, you are expected to adhere strictly to Stern's Honor Code in all matters related to this course. It is imperative that you understand the Code both in letter and spirit as it stipulates zero tolerance for cheating and plagiarism. Violations of the honor code will be prosecuted according to the rules prescribed in the Code.

As per the request of the Dean, you must include a signed statement at the top of each problem set and exam, indicating that you adhere to the honor code. The statement is: "I pledge my honor that I have not violated the Stern Honor Code in the completion of this exam/problem set."

### **Disability**

Please contact the Moses Center for Students with Disabilities (CSD, 998-4980) if you have a qualified disability that requires consideration during this course. I will work with you and the Center to provide the best possible accommodation for your need. For taking exams at the CSD, you need to submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation.

### **About Me**

I am currently visiting NYU-Stern School of Business from the Indian Institute of Management, Bangalore (IIM-B) where I head the real estate research initiative. I am the only academic from India who is part of the Global Advisory Committee of the World Economic Forum's Emerging Horizons in Real Estate. Before working on the Indian real estate market, I spent more than 20 years in the US, first as a Finance Professor at the Washington University in St. Louis, and later as part of the investment and trading groups of Goldman Sachs Asset Management ([www2.goldmansachs.com/gsam](http://www2.goldmansachs.com/gsam)) and Bridgewater Associates ([www.bwater.com](http://www.bwater.com)). I have a Ph.D. in Finance from the University of Southern California and was a visiting economist at NASDAQ between 2002 and 2003.

Module	Tentative Session Quarter (~90m)	Themes	Topics	Pre-class Readings
TBA	1	<u>Module 1</u> Introduction	Course and student introductions Course expectations	Syllabus
	1-2	<u>Module 1</u> Real Estate Market Overview	Impact of real estate markets on broader economy and global macro trends	
			Real estate markets (residential and commercial) Legal environment	BF 1-2
	3	<u>Module 1</u> Cash Flow Basics	Refresher on valuing cash flows over time, IRR and NPV	BF 3
4	<u>Module 2</u> Mortgage Mathematics	Analysis of Fixed Rate Mortgages	BF 4	
TBA	1-2	<u>Module 2</u> Mortgage Mathematics	Analysis of Fixed and Floating Rate Mortgages	BF 4-5
	2-4	<u>Module 3</u> Residential - Single Family Housing	Buy vs Renting decision Valuation and investment in regular and distressed real estate	BF 7
<b>PROBLEM SET #1 DUE (July 19)</b>				
TBA	1	<u>Module 3</u> Residential RE - Single Family Housing	Underwriting of residential properties – Acceptability of default risk	BF 8
	2-3	<u>Module 4</u> Commercial RE – Office	Forecasting demand Pro Forma Cash Flow Statement Calculation of net operating income (NOI) and Valuation	BF 9-11
	3-4	<u>Module 4</u> Commercial RE – Retail	Forecasting demand Pro Forma Cash Flow Statement Calculation of net operating income (NOI) and Valuation	BF 9-11
<b>MIDTERM EXAM (July 25, Quarter 1)</b>				

TBA	2-3	<u>Module 4</u>	Investment Analysis of <ul style="list-style-type: none"> <li>• Monument Office Co.</li> <li>• Oakwood Apartments</li> </ul>	BF 9-11
	3-4	<u>Module 4</u>	Leverage, Risk, Real options,	BF 9-11
<b>PROBLEM SET #2 DUE (Aug 1)</b>				
TBA	1	<u>Module 4</u> Commercial RE	Investment and Taxation Analysis of Income Producing Properties	BF 11
	2	<u>Module 4</u> Commercial RE – Corporate real estate	Owning vs leasing decision	BF 15
	3	<u>Module 4</u> Commercial RE – Sale of properties	Hold vs. sale decision Returns to old vs. new investors	BF 14
	4	<u>Module 4</u> Commercial RE – Risk analysis	Risk assessment through scenario analysis	BF 13
TBA	1-2	<u>Module 5</u> Development of new properties	Financing project development	BF 16
<b>FINAL EXAM (TBA, Quarters 3-4)</b>				

Real estate investments have been observed to require vast initial capital outlay which can be obtained from various sources. It is often difficult to finance hefty scale investments in real estate solely from personal savings. Hence the need for other sources of finance such as equity or self-financing, commercial banks, merchant banks, insurance Cite. Accreditations and partnerships: The MSc Real Estate Finance and Investment concentrates on the financing and investment of property but also provides an overview of surveying and property issues. It leads to a career in surveying a well-respected profession with excellent earning potential and the opportunity to work anywhere in the world. This course gives graduates of a non-associated degree a set of transferable skills that make you highly sought after in the job market, and provides the core technical knowledge and skills required for Chartered RICS membership. As a student on this course, you will be able to gain free student membership of both the Royal Institution of Chartered Surveyors (RICS) and the Investment Property Forum (IPF). Other real estate investments, like REITs, have seen average annual returns as high as 11.28%, according to Nareitâ€”even a vanilla S&P 500 ETF has provided average annual returns of about 10% long term. This isnâ€™t to say you should never buy a home or think of it as an investment. Government support for the mortgage market generally, in addition to programs that support first-time homebuyers, help you buy a home at a much lower price than would be possible with other real estate purchases.

4. Invest in Rental Properties. Real estate investing can be considered to be the art of selling or purchasing, owning or leasing of land and/or any structures on it with the sole purpose of generating profits. These investments are then broken into either residential, commercial or industrial niches depending on the intended use of the land and its accompanying structures. How do you earn from real estate investments? There are four primary ways of benefiting from a real estate investment including: Rent: This is by far the most popular way of earning from the real estate and involves generating incomes from leasing a property you own. It is a passive income earner and one that guarantees an almost steady income stream. Is There a Profitable Real Estate Investment Model? However, Real Estate can be a form of an investment. In this case, real estate investing is the purchase, ownership, management and/or sale of real estate for profit oriented purposes, where real estate is ultimately an asset that has value as well as limited liquidity. With that, it is an asset of varying value that is greatly affected by the conditions of the area in which it is in. To facilitate your search for real estate development financial models in Excel, the Eloquens catalog has got a stack of real estate financial models created by professionals and firms, that serve a broad variety of purposes in the industry.