

Dr. Patrice Derrington

411 Avery

pad2160@columbia.edu

**Financial Modeling Lab Instructor:**

Johnny Din

**Schedule:**

**Core Weekly Lecture:**

Monday, 9 am – 11.30 am

Thursday 9 am – 11 am

**Financial Modeling Lab:**

113 Avery

**Course Assistants: None**

**Course Description**

The objective of this course is for the student to develop a robust working competency with the tools and methods of financial analysis used by real estate developers, lenders and investors. Students will solidify and expand their knowledge of the various concepts inherent in the financial analysis of real estate investments, apply these concepts to making critical analyses of various real estate investment proposals, and build upon these tools in formulating the capital structure of debt and equity for real estate transactions.

Additionally, the student is to extend the capacity for financial analysis to the complex real estate development and construction activities. The goal is for students to further their understanding of, and facility with, the various tools used in evaluating the financial feasibility of real estate development projects, to apply these analytical capabilities in making critical comparisons of various real estate development proposals, and to utilize these tools in formulating the most effective capital structure for maximizing the risk-weighted return during the various stages of these projects.

**Financial Modeling Lab**

In parallel with the lectures, students **MUST** attend an Financial Modeling Lab. Students who successfully complete a qualifying test, will be appointed as Lab TAs.

The Adjunct Faculty instructor for this workshop is Johnny Din.

**COURSE STRUCTURE**

**Technical Content:** During the course, students will learn the technical concepts and analytical methods utilized in determining the financial feasibility, the debt funding and investment returns of real estate investments and development projects. Competence with the applicable financial modeling tools will be gained; and the details of decision-making in the various stages of the investment analysis and the development process will be covered.

**Application:**

Most critical to the student's learning in this course is the application of the learnt concepts and methods of finance to real life real estate development and investment situations. This application will be achieved by the student's participation in the following activities:

1. **Attendance and Participation in Class:** Concepts and analytical methods will be learned by reasoning through the real estate investment and development processes. Students are **expected to engage** in these investigative sessions with the professor by asking questions, responding to queries, and challenging notions.
2. **Quizzes, Tests and Homework Assignments of specific problems** will be undertaken **individually** by the student throughout the semester in order to ascertain that specific student's progress in understanding and utilizing the concepts and analytical methods.

**3. FINANCIAL MODELING LAB: Attendance and successful completion of the assignments are required for passing the course.**

Specific Objectives of the Lab:

- Be able to use the analytical and financial modeling tools necessary to undertake the financial analysis of real estate investments, structure appropriate real estate debt, and evaluate the feasibility of real estate development projects.
- Have a working knowledge of real estate investment, development and construction financial modeling.
- Be able to analyze and compare the relative attractiveness of various real estate investment and/or development projects.
- **Have created a comprehensive Discounted Cash Flow Proforma for the investment in a real estate operating property.**

**Course Requirements**

Students will be expected to attend and participate in class discussions as these will factor in to the final grade.

- **Attendance:** Class attendance will be reflected in the final grade. An email notifying the professor of your expected absence is recommended. If a class is missed, the student is responsible for reviewing the posted class notes and make arrangements to meet with the professor to ensure that the lessons of the missed class are understood.
- **Class Participation:** Students are required to participate in all class discussions. Active participation will be an essential component of your grade in the course.
- **Class Preparedness:** Students are required to read all assigned readings for each class, together with any supplemental presentations, case studies and homework assignments. Readings from the required textbook (or e-book) and recommended readings are provided in the Session Topics listing below.
- **Excel:** Many of the concepts in the class will utilize Excel and the successful completion of the Financial Modeling Lab projects is required.

**Final Grades:**

Grades will be weighted and assigned as follows:

- Attendance and class participation in the discussion of technical material, quizzes, and case studies: 10%.
- Excel Skills Workshop Projects: 10% and critical for course completion
- Homework Quizzes: 25%
- Midterm Exam: 25%
- FINAL EXAM: 30%

**CLASS TEXTBOOKS**

**Required Textbook:**

***Professional Real Estate Development 3<sup>rd</sup> Edition***, Richard B. Peiser & David Hamilton, 2012 Urban Land Institute.

**Recommended Reference Textbooks:**

***Real Estate Finance and Investments***, 14<sup>th</sup> Edition, William B. Brueggeman, Ph.D and Jeffrey D. Fisher, Ph.D.

***Commercial Real Estate Analysis & Investments***, 3<sup>rd</sup> edition, Geltner, Miller, Clayton, Eichholtz, 2013, Cengage Learning.

**Recommended Readings:**

- *Wall Street Journal* (in particular, Wednesday's Real Property section)
- *NY Times* (Sunday's Real Estate Section)
- *Crain's NY Business*
- *The Real Deal*

-

## ELECTRONIC RESOURCES

### Canvas @ Columbia:

Columbia University's online Canvas system will be used for posting the course syllabus, selected class materials/handouts, hyperlinks to locations from where case studies and additional reading materials to be used in the course could be found and/or purchased by students. Canvas will also be utilized for the posting by students of all Case Study and Capstone submissions. Canvas will also be utilized as a tool for the instructor and Teaching Assistants to post announcements, and also for the instructor and students to connect outside of the classroom more consistently and conveniently.

### Student Laptops and iPhones:

- **NO LAPTOPS, IPADS, OR PHONES ARE TO BE ACCESSED DURING CLASSES, *unless instructed by the professor.***
- Laptops will be used for downloading, completing and submitting Homework Quizzes, and some parts of the Midterm and Final Exams.
- Completing Financial Modeling Lab assignments.

## **COURSE GRADING CRITERIA**

Course grading criteria are as follows:

- Attendance and class participation in the discussion of technical material, quizzes, and case studies: 10%.
- Financial Modeling Lab Projects: 10% and critical for course completion
- Homework Quizzes: 25%
- Midterm Exam: 25%
- FINAL EXAM: 30%

## SESSION TOPICS (Subject to Change)

<u>Session:</u> <u>Date</u>	<u>PEISER et al.</u> <u>Chapters</u>	<u>Brueggeman</u> <u>Chapters</u>	<u>Geltner</u> <u>Chapters</u>	<u>Topics</u>
				<b>Introduction &amp; Course Overview</b>
Class 1: 6/1	5	3	1,8	<b>Review of Financial Analysis Concepts:</b> Risk/Return; time value of money; PV calculations.
Class 2A: 6/5	5	3	1,8	<b>Review of Financial Analysis Concepts:</b> more PV calculations.
Class 2B: 6/8	5	11		<b>Review of Financial Analysis Concepts:</b> Cash flow

				projections, Net Operating Income,
Class 3A: 6/12	5	11		<b>Review of Financial Analysis Concepts:</b> Investment Returns (NPV,IRR), Cap Rates Real Estate Valuation
Class 3B: 6/15	2,5	9,11,12	11,30	<b>Property Income &amp; Expenses:</b> Leases, Operating Budgets, Capital Expenditure
Class 4A: 6/19	2,5	9,11,12	11,30	<b>Building the DCF Proforma:</b> property level analysis, cap ex reserve, Market Data.
Class 4B: 6/22				<b>Review of DCF Proforma Example</b> <b><u>Review of Homework Assign 1</u></b>
Class 5A: 6/26				<b>Schematic Design Financial Feasibility</b> <b>Prof. Michael Buckley</b>
Class 5B: 6/29	5	2 12, p 381-395 4,5	13	<b>Real Estate Debt Review– Part I</b> Financial Leverage, Underwriting Loans on Income Properties, Mortgage Structures, Fixed Interest Rate Mortgage Loan Schedules <b><u>Homework 2</u></b>
Class 6A: 6/30		6,11	15.2 16,17	<b>Real Estate Debt Review – Part II</b> For Income Properties: Adjustable and Floating Rate

			Mortgage Loans, Points, Outstanding Balances, Refinancing, Loan Conditions.
			<b>DCF Proforma: adding leverage</b>
			<b>Variations of Loans</b>
Class: 7/6			Loans for acquisition, rehab, repositioning, etc.
			<b>Review of Homework 2</b>
Class 7A: 7/10			<b><u>Mid-Term in class</u></b>
			<b><u>CLOSED BOOK</u></b>
Class 7B: 7/13			<b>Review of Midterm.</b>
			<b>Real Estate Taxes</b>
Class 8B: 7/17	11, 12 18	13,14 15	Income Tax, Capital Gains Tax; Depreciation Deduction
			<b>Homework 3</b>
Class 8B: 7/20	11, 12 18	13,14,15	<b>Additional review</b> of Real Estate Taxes.
			<b>Building the DCF</b>
Class 9A: 7/24			<b>Proforma:</b> Levered Equity After- Tax Cash Flow & Investment Returns
			<b>Review of Homework Assign. 3</b>
			<b>Homework 4</b>
Class 9B: 7/27			<b>Additional Review of</b> Building the DCF Proforma: Levered

Equity After-Tax Cash Flow &  
Investment Returns

Class  
10A:7/31

**Equity Returns:** IRR, ROE,  
ROC, Equity Multiple, Promote  
& Waterfall Distributions

**Review of Homework Assign.  
4**

Class  
10B: 8/3

**Study Day**

Class  
11A: 8/7

**Pre-Final Review**

Class  
11B:8/10

**Final Exam in class**