

## Real Estate Finance (B8331)

**SPRING 2023**

### **PROFESSOR BOAZ ABRAMSON**

Location: TBA

Section 001, 3:50-5:20PM; Section 002, 6:00-7:30PM,  
Monday/Wednesday, First class: Monday, January 23, 2023

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Office Hours: By appointment

Communications from professor and teaching assistants about the course will take place through Canvas. Students should make sure they regularly check for announcements and messaging notifications.

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### **COURSE DESCRIPTION**

Real estate accounts for one third of the capital assets around the world. You simply cannot ignore it in as an investor or in any business, whether the business is called real estate or not!

This course provides students with a comprehensive understanding of real estate valuation, cycles, markets, investments, and decision-making, using modern finance and economics tools. The bulk of the course covers income-producing (commercial) property, although we will discuss residential housing as well.

This course is not a hodgepodge of vaguely connected methodologies and rules of thumb about real estate.

Rather, it uses 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.

### **COURSE MATERIALS**

- Class notes, readings, and cases are available on Canvas.
- Real Estate Finance and Investments: Risks and Opportunities by Peter Linneman—Strongly Recommended. This book provides background material and context for many of the concepts covered in class.
- Commercial real estate analysis and investments by Geltner and Miller, with Clayton and Eichholtz--provides a more detailed coverage and offers more quantitative analysis.

**CONNECTION TO THE CORE**

The learning in this course will utilize, build on and extend concepts covered in the following core courses:

| Core Course                   | Connection with Core   |
|-------------------------------|--|
| Corporate Finance             | <ol style="list-style-type: none"><li>1. Time value of money</li><li>2. Risk</li><li>3. CAPM</li><li>4. Modigliani Miller Theorem</li><li>5. Arbitrage pricing and the law of one price</li><li>6. Efficient Markets</li><li>7. Frictions</li></ol>                            |
| Managerial Economics          | <ol style="list-style-type: none"><li>1. Maximization and thinking on the margin</li><li>2. Analyzing complex decision-making under uncertainty</li><li>3. Understanding market competition and equilibrium thinking</li></ol>   |
| Managerial Statistics         | <ol style="list-style-type: none"><li>1. Statistics data analysis</li><li>2. Probability intro</li><li>3. Conditional probability</li><li>4. Modeling uncertainty</li></ol>  |
| Global Economic Environment I | <ol style="list-style-type: none"><li>1. What causes inflation</li><li>2. What drives employment</li><li>3. What are the causes of business cycle</li><li>4. What are the effects of monetary policy</li><li>5. What is the role of financial markets in the economy</li></ol> |

Students will be expected to have mastered these concepts and be able to apply them in the course

**CLASSROOM NORMS AND EXPECTATIONS**

Students are expected to adhere to CBS Core Culture in this class by being Present, Prepared, and Participating.

All of your assignment submissions are subject to the [CBS Honor Code](#). Violations of the CBS Honor Code may lead to failing the assignment, failing the course, suspension, and/or dismissal. In order to avoid ambiguity that may lead to unintentional violations of the Honor Code, assignment description types have been standardized and specified below.

Class participation counts for 5% of your course grade. Please don't be shy --Ask questions to clarify what we are discussing or to bring a different perspective in class. The course is cumulative, so being lost gets quite costly very quickly. Constructive comments in class will increase the participation points. Naturally, consistently bad or irrelevant participation will decrease the participation points. Unexcused absences or late arrivals will be considered as a factor in class participation.

## COURSE ROADMAP/SCHEDULE

| Session   | Topic(s)  | Assignments Due           |
|-----------|---|---------------------------|
| <b>1</b>  | Course Overview and Requirements  |                           |
| <b>2</b>  | Introduction to Pro forma, Risk and Leases                                  |                           |
| <b>3</b>  | Analysis of Income Producing Properties: Valuation and Cap Rates            |                           |
| <b>4</b>  | Mortgage Mechanics and Introduction to Case 1 Part 1                        | <b>HW#1 Due</b>           |
| <b>5</b>  | Real Estate Capital Structure I: Implications for Risk and Return           |                           |
| <b>6</b>  | Real Estate Capital Structure II: Law of One Price                          | <b>HW #2 Due</b>          |
| <b>7</b>  | Case #1 Part 1 Discussion   | <b>Case #1 Part 1 Due</b> |
| <b>8</b>  | Real Estate Capital Structure III: Subordinate Debt and Mezzanine Financing |                           |
| <b>9</b>  | Real Estate Capital Structure IV: Financing Strategies beyond Plain Vanilla |                           |
| <b>10</b> | Real Estate and Taxes   |                           |
| <b>11</b> | Case #1 Part 2 Discussion   | <b>Case #1 Part 2 Due</b> |
| <b>12</b> | First Midterm exam in class   | <b>Midterm Exam</b>       |
| <b>13</b> | Mortgage Default Decisions and Introduction to Case 2                       |                           |
| <b>14</b> | Land Development, Valuation, Risk, and Return                               |                           |
| <b>15</b> | CMBS  |                           |
| <b>16</b> | Case #2 Discussion and Distressed Debt Investing                            | <b>Case #2 Due</b>        |
| <b>17</b> | Real Estate Investment Trusts   |                           |

|           |                                     |                    |
|-----------|-------------------------------------|--------------------|
| <b>18</b> | Real Estate Private Equity Funds    |                    |
| <b>19</b> | Housing Markets and Housing Finance | <b>HW #3 Due</b>   |
| <b>20</b> | To Own, Rent, or Invest?            |                    |
| <b>21</b> | Case #3 Discussion                  | <b>Case #3 Due</b> |
| <b>22</b> | Affordable Housing                  |                    |
| <b>23</b> | Course Review Session               |                    |
| <b>24</b> | Second Midterm in class             | <b>Final exam</b>  |

## ASSIGNMENTS

There will be both homework assignments and cases. They jointly account for 60% of your grade. Assignments should be turned in at the beginning of class on the day it is due. Late assignments will be accepted under no circumstances.

Cases will be completed in groups. The maximal size of a group will be three. Under no circumstances, will I accept any group whose size is larger than 3. It is solely your responsibility to form the group. You will do three cases. Each case counts 15% towards your course grade.

Homework assignments will be completed individually. You will have three homework exercises. Each homework assignment accounts 5% of your course grade.

### 1st midterm

The first midterm exam covers material for the first half of the lecture. It is only offered in class. Make-ups are not given unless you have written authorization from the student affairs office.

### 2nd midterm

The second midterm exam covers material from the lectures after the 1st midterm. It is only offered in class. Make-ups are not given, unless you have written authorization from student affairs office.

The two midterm exams jointly account for 35% of your course grade. When calculating your course grade, I will choose the larger score based on the following two weights: (i) 25% on the first midterm and 75% on the second midterm; and (ii) 50% on both the first and second midterms. I hope that this will give you incentives to work hard after the first midterm, even if you unfortunately did not perform well on the first midterm!

The readings distributed over the semester are to help you better understand concepts and materials covered in class. Materials only in the readings but not covered in class are not required for the exams. I will be very precise about what you need to know for the exams in the exam review sessions.

### **Re-grading**

All requests for re-grades must be submitted, in writing, within two weeks of my returning the graded homework, case, or the exam. You must submit the entire homework, case, or the exam, along with a detailed description of what you think was scored incorrectly. Before submitting your request, you should carefully examine the posted solutions. Re-grading may potentially lead to a lower grade.

### **METHOD OF EVALUATION**

|                          |     |   |
|--------------------------|-----|---|
| Participation            | 5%  | C |
| Homework Assignments (3) | 15% | C |
| Cases (3)                | 45% | A |
| Exams (2)                | 35% | C |

(A – group, C - individual).

### **ATTENDANCE POLICY**

Students are required to attend each class. Students should reach out to the instructor or TA regarding excused absences (for religious observances; personal, medical, and family emergencies; military service; court appearances such as jury duty). Unexcused absences will affect your course grade.

This course may use PollEverywhere as a tool to increase in-class student engagement. PollEverywhere may also be used to confirm student attendance and participation records. Students who have concerns regarding whether their responses have been recorded should contact the instructor. If a student is absent from class and is allowed to attend a different cluster's class meeting, it is at the discretion of the faculty member to count responses to any polls presented during this time as attendance or participation. Finally, if a student is not present in the classroom at the time of a poll (due to absences or any other reasons), the poll should not be answered. Responding to a poll when not present in the classroom is a violation of the Honor Code.

### **INCLUSION, ACCOMMODATIONS, AND SUPPORT FOR STUDENTS**

At Columbia Business School, we believe that diversity strengthens any community or business model and brings it greater success. Columbia Business School is committed to providing all students with the equal opportunity to thrive in the classroom by providing a learning, living, and working environment free from discrimination, harassment, and bias on the basis of gender, sexual orientation, race, ethnicity, socioeconomic status, or ability.

Columbia Business School will make reasonable accommodations for persons with documented disabilities. Students are encouraged to contact the Columbia University's Office of Disability Services for information about registration. Students seeking accommodation in the classroom may obtain information on the services offered by Columbia University's Office of Disability Services online at [www.health.columbia.edu/docs/services/ods/index.html](http://www.health.columbia.edu/docs/services/ods/index.html) or by contacting (212) 854-2388.

Columbia Business School is committed to maintaining a safe environment for students, staff and faculty. Because of this commitment and because of federal and state regulations, we must advise you that if you tell any of your instructors about sexual harassment or gender-based misconduct involving a member of the campus community, your instructor is required to report this information to a Title IX Coordinator. They will treat this information as private, but will need to follow up with you and possibly look into the matter. Counseling and Psychological Services, the Office of the University Chaplain, and the Ombuds Office for Gender-Based Misconduct are confidential resources available for students, staff and faculty. “Gender-based misconduct” includes sexual assault, stalking, sexual harassment, dating violence, domestic violence, sexual exploitation, and gender-based harassment. For more information, see <http://sexualrespect.columbia.edu/gender-based-misconduct-policy-students>.