University of Wisconsin – Madison, School of Business

REAL EST 410: REAL ESTATE FINANCE

Sections 002 and 003

Spring 2024

Course Credits:	Three (3)
Course URL:	Section 002 (https://canvas.wisc.edu/courses/383933)
	Section 003 (https://canvas.wisc.edu/courses/383939)
Course Designation:	N/A
Meeting Time:	Section 002 – Mon,Wed 11:00 ~ 12:15
	Section 003 – Mon,Wed 13:00 ~ 14:15
Location:	2280 Grainger Hall
Instructional Mode:	In-person

Primary Instructor:	Professor Dayin Zhang
Office:	5261 Grainger Hall
Email:	dayin.zhang@wisc.edu
Office Hours:	Mon/Tue 5:00-6:00 pm
TA:	Shang Zeng (szeng47@wisc.edu)
	OH: Thur 3:00-5:00 pm, 2167 Grainger Hall TA Room

Course Description

Fundamentals of real estate finance and investment. Qualitative and quantitative characteristics of commercial real estate. Developing and analyzing commercial property cash flow projections. Introduction to three approaches to valuation with emphasis on investing in commercial real estate. In-depth exposure to debt and equity investor returns.

Course Requisites

A A E/ECON/REAL EST/URB R PL 306 and (FINANCE/ECON 300 or concurrent enrollment); or member of undergraduate Business Exchange program.

Course Overview

Real Estate Finance (REAL EST 410) introduces students to the basics of real estate investment analysis. The opening section of the course will cover financial concepts of the time value of money and real estate transaction basics. The course then introduces students to the various types of commercial real estate and focuses on constructing the income proforma cash flow statement. Learning how to construct the income proforma/statement of cash flow includes learning about building type, locations, physical characteristics, real estate supply and demand, and various other qualitative concepts of commercial real estate. Once the foundation of how the income proforma/statement of cash flow works, the course begins to build a quantitative approach to valuing real estate. Students will then begin to understand the concept of underwriting commercial real estate for investment purposes, how to use debt and equity to pay for real estate, and how to calculate the return on investment. In addition to the classic analysis framework of commercial real estate, this course will discuss three special topics: (1) commercial real estate in and after the COVID-19 crisis; (2) mortgage securitization and the 2008 financial crisis; and (3) inflation, monetary policy, and interest rate analysis. Students will be exposed to real-world problems and are expected to apply analytical tools to derive logical solutions to situations that require financing and real estate investment decisions.

This is a foundation course that will prepare students to take more advanced real estate courses in the real estate department. The high-level learning objectives of this course are to familiarize students with the U.S. real estate institutional environment and provide context and analytical tools to help students succeed by making informed and value-adding business decisions. By the end of this course, students should be able to have informed and intelligent conversations with industry professionals about a wide variety of topics in real estate.

Learning Outcomes

- Analyze the basic financial aspects of multifamily and commercial real estate.
- Construct and analyze multifamily and commercial real estate pro forma cash flow statements and property valuations.
- Apply the abstracting process of the income elements and critical operational components of multifamily and commercial property leases to quantify the financial impact to the property pro forma cash flow statement.
- Analyze the financial aspects of multifamily and commercial debt and equity capital returns.
- Articulate multifamily and commercial real estate property and market characteristics, supply and demand drivers, and differences between the various property types.

How Course Credit Hours are Met

This class meets for two, 75-minute class periods each week over the fall/spring semester and carries the expectation that students will work on course learning activities (reading, writing, problem sets, studying, etc) for about 3 hours out of the classroom for every class period, or approximately 6 hours per week.

How to Succeed in This Course

Attending the two, 75 minute, in-person lectures is critical to successfully completing the course. Students are encouraged to ask questions, bring up relevant discussion topics, and participate in interactive lectures. Outside of class, students are expected to *complete the relevant readings, review available lecture notes, and attempt the homework problems in advance of the lecture*.

In-person lectures will combine the presentation of the lecture material with discussion of current events in the real estate market. In addition, a portion of lecture will be reserved for demonstrating example problems, taking quizzes and/or exams, etc. Certain quizzes and exams may be conducted on-line. There will be additional out-of-class work each week that includes problem solving, case study work, and reading.

Regular and Substantive Student-Instructor Interaction

REAL EST 410 is an in-person course taught by the Instructor and students receive direct instruction twice weekly. Students are encouraged to ask questions, bring up relevant discussion topics, and participate in interactive lectures. This in-class interaction is part of the class participation portion of the student's grade. The Instructor will provide information and respond to questions about the content of the course or a specific competency. In addition, on certain assignments (i.e. case study assignments), comments and suggestions about how to improve their work will be provided to students.

Required Textbook, Software, and Other Course Materials

Text:	*Real Estate Finance and Investments*, by William B. Brueggeman and Jeffrey D. Fisher, McGraw-Hill Publishers, 17th Edition
Lecture Slides:	Lecture slides will be posted on Canvas prior to class.
News Articles:	Please register for the free Academic Pass through UW-Madison library: *The New York Times* (https://learn.library.wisc.edu/accessing-nytimes/) *WSJ* (https://www.library.wisc.edu/business/wsj-com-information/)
HBR Case Study:	An assigned case study will be available later in the semester. There will be a nominal additional charge.
Software:	Microsoft Excel. All UW-Madison students have free access to Microsoft Excel through their Office 365 account.
Readings:	Additional required readings will be periodically assigned and will be available on Canvas.

Additional supplemental discussion readings will be provided as needed during the semester.

Course Policies

In-Person Instruction

This is a face-to-face class. Class time will be reserved for going through the lecture material, covering additional related topics, demonstrating solutions to example problems, taking quizzes and tests. Students are strongly encouraged to review the posted lecture material, read the assigned readings, and attempt the homework prior to the class presentation. Attendance and participation during the lectures will count towards the overall class participation portion of the grade. If a student needs to miss a lecture at the scheduled time, students must email the instructor well in advance.

Late Assignments

Late assignments will not be accepted unless cleared well in advance with the instructor. Late assignments that are not cleared well in advance will receive a reduction in score, and possibly a zero. It is very important that you do all your own work in this class. Exams will be closed book and closed note, unless otherwise announced.

Academic Integrity Statement

By virtue of enrollment, each student agrees to uphold the high academic standards of the University of Wisconsin-Madison; academic misconduct is behavior that negatively impacts the integrity of the institution. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these previously listed acts are examples of misconduct which may result in disciplinary action. Examples of disciplinary action include, but is not limited to, failure on the assignment/course, written reprimand, disciplinary probation, suspension, or expulsion.

Additional Information on Academic Integrity

It is vitally important to stress the University's academic integrity policy. I cannot emphasize enough how important working independently on this course is to your future in real estate. If I believe, for any reason, there is potential collaboration happening, I will meet individually with all individuals involved. Based on the outcome of that meeting, your grade may be impacted. With this said, there are times throughout the semester when working together will be encouraged and required (e.g. the case study).

More generally, you will be expected to show common courtesy to your instructor and fellow students while in the classroom by giving them your undivided attention. While computer use is acceptable for taking notes in class, if the use of a computer becomes a distraction for any reason, the privilege to use a computer may be revoked.

Privacy of Student Records & the Use of Audio Recorded Lectures Statement

Lecture materials and recordings for this course are protected intellectual property at UW-Madison. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

Accommodations for Students with Disabilities

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (UW-855) require the university to provide reasonable accommodations to students with disabilities to access and participate in its academic programs and educational services. Faculty and students share responsibility in the accommodation process. Students are expected to inform faculty [me] of their need for instructional accommodations during the beginning of the semester, or as soon as possible after being approved for accommodations. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to provide reasonable instructional and course-related accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA. (See: McBurney Disability Resource Center)

Diversity and Inclusion

Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.

Classroom and Course Expectations

- Complete assigned readings, review lecture material and attempt homework assignments before attending class
- Participate and ask thoughtful questions (but don't dominate the discussion)
- Show work on all assignments and tests. As an essential part of demonstrating knowledge, showing your work provides you with the ability to gain partial credit on some assignments, quizzes or tests
- Be professional and considerate at all times
- Always follow formal and informal codes of conduct, including always following the code of academic integrity
- Strive for excellence

Course Grading

1.	Participation and Professionalism	10%
2.	Quizzes	5%
3.	Homework Assignments	20%
4.	Exams	45%
5.	Case Study	20%
		100%

1. Participation and Professionalism

Class participation is an important component of your overall grade. Class participation is graded based on attendance and productive engagement on a day-to-day class basis. Students are encouraged to participate actively (and behave appropriately) in class. This means contributing to class discussions by speaking or submitting questions or comments during class sessions and constructively contributing to presentations and discussions.

- Meet Your Professor (5%). An important part of the learning experience is knowing when to seek help, find mentors, and use resources. I am here to help you through that process. In order to get to know each other and for you to feel comfortable reaching out, each student must schedule a 20-minute time to meet individually with me before March 6th.
- Class Participation (5%). You will lose 1 point by missing a class without informing me ahead of time. You will lose a maximum of 5 points throughout the semester. If you make significant contributions to the lecture by asking or answering questions, I will give points back to you to compensate for the no-excuse absences.

You will lose **ALL** participation points (without makeup) through unprofessional behavior and contributions during class. Unprofessional behaviors include but are not limited to:

- Group Project Participation – At the completion of the group project, your performance on the case study will be reviewed by your fellow group members. If your fellow group members rate your performance and participation significantly below expectations, points may be deducted. It is possible under this rule to lose all of your class participation points.
- Classroom Behaviors – Sharing online material not related to the class, distracting fellow students, repeatedly talking while the instructors are talking, sleeping or appearing to be asleep, making inappropriate comments, and rude or derogatory treatment of others. Any violation will result in a 1-point penalty without makeup.
- Use of Digital Devices – Students are required to put cell phones in backpacks prior to the live discussion sessions. Computers are to be used for in-class Canvas activity only. Any other computer use, i.e., surfing the web, chatting with others, etc., will be deemed a violation and may result in that student not being able to use their computer in class. This may have a material impact to the student's grade.

2. Quizzes

There will be short quizzes to test your understanding of assigned reading and prior lecture materials.

3. Homework Assignments

You will have 6 homework assignments throughout the semester. And **your final homework grade will be based on the 4 highest grades out of the 6 homework assignments**.

Written solutions to homework assignments should be thoroughly explained and logically coherent. Clear writing reveals the clarity of understanding. Leaving a paper trail is essential so that your solution logic can be followed. Your assignments will be graded based on completeness (breadth) and understanding (depth).

4. Exams

There will be 2 (non-cumulative) midterms and 1 final (non-cumulative) given during the semester. The exams will be closed-book. **Your exam grade will be based on the 2 highest grades out of the 3 exams**, so don't get too disappointed or frustrated if you have one bad exam.

5. Case Study

You will **be assigned to a team of three** to complete the case study. The case study submission may have multiple submissions over the course of several weeks. You will be graded based on the in-class discussion, the write-ups, and other group members' assessment of your contribution. A successful write-up requires both a quantitative analysis and a qualitative written articulation of what the numbers and other information mean. The ability to take numbers, summarize them properly so that they are informative, and then integrate them into a written story is central to your assignment grade.

<u>Grade Distribution</u>

Final grades will be based on a curve to meet the Wisconsin School of Business Grading Expectations Policy that dictates the *GPA* for the class cannot exceed 3.3 and A's are limited to a maximum of 30% of the student population. This means there will be limits to the number of A's and AB's assigned in the course. I do not publish a curve for interim scores. If you require more feedback than is being provide, please meet with the instructor to discuss.

Here is the grade distribution from the academic year of 2022-2023.

Letter Grade	Numeric Grade	Cutoff Percentile
A	>= 90.15	30%
AB	84.9 – 90	56%
B	79.9 – 84.5	80%
BC	75 – 79.5	92%
C	60 – 74.5	100%
D	NA	
F	NA	

Tentative Class Schedule

PART I: Commercial Real Estate Analysis

Week	Date	Lecture Topic and Required Readings
1	1/24	Course Introduction and Overview • ***Assignment: Quiz 1 on the syllabus (after class on Canvas)***
2	1/29	Basic Financial Calculations I: Time Value of Money • *Reading: Text,* Chapter 3 *p.42-56*
	1/31	Basic Financial Calculations II: Annuity, NPV, IRR, Perpetuity • *Reading: Text,* Chapter 3 *p.56-74* • ***Assignment: Homework 1 (due on 2/11)***
3	2/5	***In-Class Jeopardy! (Quiz 2) on*** Real Estate Basic Legal Concepts • *Reading: Text,* Chapter 1 • *Reading: Text,* Chapter 2
	2/7	Introduction to Commercial Real Estate • *Reading: Text,* Chapter 9 *p.249-261* • ***Assignment: Homework 2 (due on 2/18)***
4	2/12	Lease Income and Net Operating Expenses • *Reading: Text,* Chapter 9 *p.261-272*
	2/14	Safehouse Lease Discussion • *Reading: Safehouse Lease* • *Quiz 3 in class on the Safehouse Lease* • ***Assignment: Homework 3 (due on 2/25)***
5	2/19	Income Pro Forma • *Reading: Text,* Chapter 9 *p.272-285*
	2/21	Commercial Real Estate Valuation • *Reading: Text,* Chapter 10 • *Midterm 1 Review* • ***Midterm 1 Practice Exam (no due date)***
6	2/26	Catch-up and review
	2/28	**Mid-Term Exam #1 (in-class)**

PART II: CRE Debt Financing

Week	Date	Lecture Topic and Required Readings
7	3/4	Fixed Rate Mortgages I: Constant Payment Mortgage
		• *Text,* Chapter 4 *p.78-96*
	3/6	Fixed Rate Mortgages II: APR and Effective Borrowing Cost
		• *Text,* Chapter 4 *p.96-109*
		• ***Assignment: Homework 4 (due on 3/34)***
8	3/11	Adjustable Rate Mortgages
		• *Text,* Chapter 5
	3/13	Adjustable Rate Mortgages II
9	3/18	Mortgage Finance Decisions
		• *Text,* Chapter 6
	3/20	CRE Mortgage Debt Financing
		• *Text,* Chapter 12 *p.402-405*
		• ***Assignment: Homework 5 (due on 4/3)***
10		Spring Recess
11	4/1	Catch-up and review
		• *Midterm 2 Review*
		• ***Midterm 2 Practice Exam (no due date)***
	4/3	**Guest Lecture**: CRE Investment Principles-Mike Brennan
		• *Quiz 4 after class on the guest lecture*

PART III: CRE Equity Investment

Week	Date	Lecture Topic and Required Readings
12	4/8	**Mid-Term Exam #2 (in-class)**
	4/10	CRE Investment Analysis I: Investment Analysis • *Text,* Chapter 11 *p.347-361* • ***Assignment: Madison Student Housing Case-Question Set 1 (due on 4/21)***
13	4/15	CRE Investment Analysis II: Debt and Tax Considerations • *Text,* Chapter 11 *p.361-374*
	4/17	Financial Deal Structuring • *Text,* Chapter 18 • ***Assignment: Homework 6 (due on 4/30)***
14	4/22	Madison Student Housing Case Discussion I: In-class presentation • ***Assignment: Madison Student Housing Case-Question Set 2 (due on 4/30)***
	4/24	Real Estate Investment Trusts (REITs) • *Text,* Chapter 21
15	4/29	Special Topic: Mortgage Securitization and the 2008 Financial Crisis • *Final Review* • ***Final Practice Exam (no due date)***
	5/1	Madison Student Housing Case Discussion II: In-class presentation
*	5/7	**Final Exam**