

University of Maryland
School of Architecture, Planning and Preservation
Graduate Programs in Real Estate Development

SYLLABUS: RDEV 450
FOUNDATIONS OF REAL ESTATE FINANCE AND INVESTMENT

Real Estate Finance and Investment addresses how real estate value is established, the fundamental foundations of the time value of money, as well as more real estate specific applications of return on investment, net operating income, the components of a real estate sources and uses statement, sources of real estate equity and debt financing, commonly used debt ratios and equity returns in real estate, as well as concepts of sensitivity analysis and exit strategies.

COURSE INFORMATION

Prerequisite: Approved Accounting Course OR RDEV 270
RDEV 250
RDEV 350 (Prerequisite or Corequisite)

Credits: 3

Course Time: TBA

Classroom: Architecture Building; Room: TBA

Textbooks: *Using Excel for Business Analysis: A Guide to Financial Modelling Fundamentals*
Fairhurst, Danielle Stein, Wiley Finance

Professor:

Contact:

Office Hours: By appointment before or after class
At ARC Building 145, Colvin Institute Office #1121

Computer: Ownership of or access to a personal computer is required.
Student should also have access to Microsoft Office (see software section below) or at a minimum, access to the following Office program components: Word and Excel.

Much of what is done in real estate development, particularly in financial projections, is performed using Excel. Non-Windows based operating systems running Excel are known to exhibit a variety of problems/glitches.

Software (Free!): TERPware: (<https://terpware.umd.edu/Windows>) is the software download website for the University of Maryland, College Park. Various software products are available for download and use by UMD students, faculty, and staff through agreements managed by the Division of IT between the university and software companies.

Incoming students can download software beginning 24-48 hours after they have registered for classes.

Recommended Software Downloads available for PC:

- Office Professional Plus 2013 – Student or Office Professional Plus 2010 – Student
- Acrobat XI Professional
- Windows 7 Ultimate or Windows 8 – Professional – Student (If you are currently running earlier versions of Windows such as XP).
- Adobe Creative Suite 6

COURSE OBJECTIVES

1. To prepare students with excel skills, the principles of real estate pro formas and the basic financial concepts needed to analyze the revenue potential and value a piece of real property does or could have.
2. To enhance each student's analytical capability, being able to sort through a large amount of unfamiliar information and make the judgment calls about what is most important.
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COURSE POLICIES

1. Class Participation: This is an undergraduate seminar course. It is essential to the class, the professor and other students that you are in class for each scheduled session ON TIME, the ENTIRE TIME. Class participation by all students is key to the learning experience.
2. Excused absences: Per University policy, an excused absence is an absence for which the student has the right to receive, and the instructor has the responsibility to provide, academic accommodation. The University has standard course related policies regarding attendance, absences, or missed assignments, and other matters that you should review carefully. The policies relevant to undergraduate course are found here: <http://www.ugst.umd.edu/courserelatedpolicies.html>

Documentation must be provided for all excused absences, and must be approved in advance, unless they meet the University criteria for an emergency. Informing your instructor that you will miss class for an excused documented reason does not change the due date of assignments. For religious observances, in class exercises or site visits that have academic credit (points) attached that will be missed, consult with the instructor early in the semester. For emergency excused absences where it was not possible to turn in the assignment prior to class, you must propose an accommodation in writing and a schedule for turning in your work by Friday of the same week it is due. Exceptions to that would be very rare, but if necessary email or have a representative email Professor.

Traffic and work are not emergencies and do not qualify for an excused absence.

3. Inclement Weather: Official closings/delays are announced on the campus web site: www.umd.edu and through local radio and TV stations. Any loss of class time resulting from delays or closing will be rescheduled.
4. Course Communications: You are responsible for providing a working email address that will be incorporated in a group email file to be used by the instructor. You should be sure that this is also the email address that you use to receive University email (make any change in www.testudo.umd.edu) -- as this is where the University and Program sends graduation and other announcements; if your Testudo/University email is not the one you check regularly, you will not receive emails through the system.

ELMS will be used in this course, so you will need to check the website regularly.

5. Cell Phones/Electronic Devices: Please turn off (and put away) all cell phones and other non-PC electronic devices when you come to class.

Audio and or video recording during class activities is prohibited. Violation will result in a permanent suspension from class.

6. Copyright Notice: Class lectures and other materials are copyrighted and may not be reproduced for anything other than personal use without written permission from the instructor. The policies relevant to undergraduate course are found here: <http://www.ugst.umd.edu/documents/CourseRelatedPolicies.pdf>
7. Computers: Ground Floor PC Computer Lab and upstairs lab on the South Side of the Mezzanine are open to you 24/7 for working with installed programs. Homework may be printed there prior to the start of class (although equipment and paperless situations arise; best to bring your homework preprinted).
8. Academic Integrity: The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. Along with certain rights, students have the responsibility to behave honorably in an academic environment. Academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, and plagiarism, will not be tolerated. Plagiarism for those of you who have been out of school a while includes the use of the words, or ideas, of another person, without attribution.

Academic dishonesty is a corrosive force in the academic life of a university. It jeopardizes the quality of education and depreciates the genuine achievements of others. It is, without reservation, a responsibility of all members of the campus community to actively deter it. Apathy or acquiescence in the presence of academic dishonesty is not a neutral act. Histories of institutions demonstrate that a laissez-faire response will reinforce, perpetuate, and enlarge the scope of such misconduct. Institutional reputations for academic

dishonesty are regrettable aspects of modern education. These reputations become self-fulfilling and grow, unless vigorously challenged by students and faculty alike.

All members of the University community-students, faculty, and staff-share the responsibility and authority to challenge and make known acts of apparent academic dishonesty.

Any of the following acts, when committed by a student, shall constitute academic dishonesty:

- CHEATING: intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.
- FABRICATION: intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
- FACILITATING ACADEMIC DISHONESTY: intentionally or knowingly helping or attempting to help another to violate any provision of this Code.
- PLAGIARISM: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise.

The Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. You should review carefully the information on the Code of Academic Integrity or the Student Honor Council at <http://shc.umd.edu/SHC/HonorPledgeUse.aspx>.

Student Honor Pledge: Each assignment and exam is assumed to include the following pledge: "I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination."

WORKING WITH OTHERS : There are several ways to "work with others" on a project in this class. Some are acceptable, and one is NOT. Please pay close attention to what the options are below.

- a) CONSULTING (ACCEPTABLE) – Looking to find additional learning support for an assignment is acceptable. Before you give up (or move beyond acceptable consulting) or call your instructor, you are welcome to:
 - Check self-teaching books or on-line for on-line tools that provide additional support in practicing the type of assignment prepared. Particularly for skills such as Excel, if you do not have the basics of working with Excel, there are plenty of "dummy" books and on line tools to refresh or teach you the basics. (Not much different than studying alone, but okay to look for additional teaching and

practice outlets.) You are encouraged to use the internet to research Excel errors, challenges and formulas.

- Talking with a fellow student in the class (short of doing the work together as in section 3. below, or copying some or all of their work, Section B. below). You should not impose on your fellow students if you have simply missed class, other than a brief did you take notes, or what is the 5 minute version of what you learned.
- Working with a Group of fellow students and practicing in a lab together, where each person is doing their own work, but you can ask a colleague "how" to do something, but not "the answer."

b) USING OTHER'S WORK (NEVER ACCEPTABLE) – Taking a part or a whole of the work of another student, either a classmate or someone who has taken the course previously, is NEVER acceptable. (This is considered plagiarism and is prohibited by the University's rules. If it is discovered (and that is likely to happen), you will receive a 0 on the assignment and be referred to the Director. A second offense would result in dismissal from the class, or even the University. Don't do it. Besides you don't learn anything when you do this, wasting your money and leading to false credentials!!

FAILURE TO ABIDE: If you are involved in any obtaining unauthorized assistance, or plagiarism, or any other activity that violates the academic integrity of your work or the work of others you may earn a failing grade for the course, or be subject to dismissal from the Program.

9. Students with Disabilities: If you are a student that requires special accommodations during the semester, you should make an appointment to meet with the Professor as soon as possible if you to address any accommodations you may need. For more information about the disabilities and accommodations, go to <http://www.ugst.umd.edu/documents/CourseRelatedPolicies.pdf>. Students with disabilities can register with the University Disability Support Services at www.counseling.umd.edu/DSS/.
10. Course Evaluations: You are responsible for submitting the formal University course evaluation for this course at CourseEvalUM in order to help faculty and administrators improve teaching and learning at Maryland. Please make a note now of the dates and the link at which you can access the submission system (www.courseevalum.umd.edu).

Students who have completed all of their course evaluations the previous semester (i.e., left none "Pending" in their Evaluations Dashboard) will retain access to the results from the university-wide student set the following semester to help guide their course selection. Students waiving or failing to complete one or all of their course evaluations will not fulfill the necessary requirements for access to any of the results. To retain this access, you must submit all of your evaluations each semester. More information is at <http://www.ugst.umd.edu/documents/CourseRelatedPolicies.pdf>

11. Learning Assistance Service (LAS): If you are experiencing difficulties in keeping up with the academic demands of this course, contact the Learning Assistance Service, 2202 Shoemaker Building, 301-314-7693. Their educational counselors can help with time management, reading, math, writing skills, note-taking and exam preparation skills. Of particular interest to graduate students is the opportunity to work individually with academic specialists, as well as attend any LAS workshops. LAS also has a specialized structured writing group for international graduate students. There are new web based self-instruction tools that have been collated by the Graduate School that take you directly to sites that can help with grammar and basic writing skills if needed. All services are free to UMD students.

COURSE REQUIREMENTS

1. Grading: Grading will be on a curve distributed among the following areas:
 - Class Participation: 5%
 - Assignments/Projects: 85%
 - Final Project: 10% (Approximately)

2. Assignments: Assignments are listed on ELMS. Additional assignment information, if needed, will always be posted on the ELMS site for at least a week before the due date (see syllabus). Homework assignments as specified in the syllabus are subject to change up to two weeks before the due date. Any changes will be posted on ELMS.

All assignments must be handed in via ELMS.

For assignments that build on previous assignments (i.e. the model)-If I note corrections to make on an assignment, you must make those corrections before you turn in the next step in the assignment. Assignments that build on previous assignments are staggered so that you will get comments on the assignment before the next one is due. I will deduct points if you do not address comments from the prior assignment.

Late assignments: I will accept up to two late assignments (excluding the final project) per student if the assignments is posted on ELMS within 48 hours past the due date/time. Your grade on the assignment will be reduced by 50%. No late final projects will be accepted. If you are late on or miss more than two assignments, you will not receive any credit and we should talk about whether you should continue the class.

Many assignments build off previous assignments. Even if you miss an assignment, you will still need to complete the work in the assignment and turn it in to me for review and comments so that you can complete subsequent assignments.

Please format excel and written assignments as specified on ELMS

3. Real Estate News: We encourage each student to subscribe to either the Washington or Baltimore Business Journal (student rates are available). These should also be available in the ARC Library.
4. Class Participation and Business Conduct: You are expected to have read the assigned material and be prepared to participate in class discussion each week. Business like conduct is expected at all times. If you expect (or are in fact) LATE, do NOT enter the classroom during a guest lecturer's presentation. Many industry participants lecture in this (and your other) class (es). Coming late to class is not only disruptive to the other members of the class, but is not a good representation of yourself, or the MRED program, to potential employers. Your reputation and the MRED program reputation are affected by your actions.

NEVER enter the class and walk across in front of a responsive or your instructor!

BRING YOUR NAME TENT AND USE IN EVERY CLASS PERIOD.

5. Examinations: This is a project, discussion and analysis course so you will not be taking any exams. There may be unannounced quizzes.

COURSE SCHEDULE

Week 1

Topic: Intro to Excel

Assignments: Create an Excel spreadsheet using basic Excel concepts. Guidelines posted on ELMS.

Week 2

Topic: RE development overview

Assignments: Select a case study from the Urban Land Institute Case study Database. Write a 2-3 page memo describing concepts discussed in class today, including project risks and location.

Week 3

Topic: Zoning-back of the envelope-what can you build on a site?

Assignments: Zoning calculations: Prepare a zoning analysis of a site in DC, 1707 7th Street NW, also known as Square 0442 Lot 0106. Assume that the proposed use is 100% apartments (residential, multiple-dwelling unit, more than 4 units). More guidelines posted on ELMS.

Week 4

Topic: Development Schedule

Assignments: Prepare a development schedule in MS Project. Guidelines posted on ELMS.

Week 5

Topic: Real Estate Club Speaker; Building a financial model-Key Assumptions

Assignments: 1) Write a 2 page memo describing the speaker's talk, and how it relates to topics discussed in class to date.

2) Start building a model by creating a Key Assumptions page. Guidelines posted on ELMS.

Objective is to

- Understand the difference between GSF, NRSF. Understand what a core factor is.
- Set up a Key Assumptions tab for a financial model that is readable and well organized
- Know what assumptions are key assumptions versus initial inputs
- Insert new tabs, change tab names and tab colors, move and copy tabs
- Name cells and use named cells
- Concatenate text
- Understand how to format numbers
- Create and use custom number formats
- Use consistent file names

Week 6

Topic: Residential mortgage/finance, secondary mortgage market RE development overview

Assignments: Calculate housing affordability to under mortgage underwriting. Details posted on ELMS

Week 7

Topic: Site Visit-Date TBD

Assignments: Write a 2-3 page memo describing the project and speaker's talk and how it relates to topics discussed in class so far.

Week 8

Topic: Real Estate development Budget

Assignments: Continue building the model by adding a development budget and draw schedule. Guidelines posted on ELMs. Objective is to

- Hard coding only when necessary for assignment draw schedule-per class discussion
- Set up a budget
- Set up a draw schedule
- Set up check columns
- Carry information from one tab to another
- Know when it is necessary to round numbers and when it isn't.
- Format for clarity
- Number formatting, know when to show decimals
- Know initial inputs versus Key Assumptions
- View-Freeze row/column
- Correct calculations
- Use functions and skills from previous lessons
- Use TEXT function

Week 9

Topic: Data analysis/Pivot Tables

Assignments: This assignment consists of entering data into an Excel spreadsheet and analyzing it using a pivot table and pivot chart. Guidelines posted on ELMs. Objective is to

- Learn how to enter data into a data format for analysis in Excel
- Learn how to filter data
- Learn how to analyze data using a pivot table and pivot chart

Week 10

Topic: Operating Income/Market Research

Assignments: Continue building a model by calculating operating income. Guidelines posted on ELMs. Objective is to

- Understand the difference between GSF, NRSF and when each are used
- Understand the components of and how to calculate Net Operating Income
- Understand how inputs/information is typically presented and convert as appropriate.
- Understand how to calculate a weighted average
- Use the SUMPRODUCT function

Week 11

Topic: Real Estate Financing-Debt & Equity

Assignments: Continue work on the model by calculating the debt and equity required to finance a development project. Guidelines posted on ELMs. Objective is to

- Understand how to calculate debt and equity in a development model.
- Learn advanced Excel formula MIN.
- Learn about using circular references in Excel.

Week 12

Topic: Building Sale/cap rate/appraisal/Land as residual value

Assignments: Continue work on the model by calculating the estimated build sale price and repayment of construction loan. Guidelines posted on ELMs. Objective is to

- Understand building value
- Use IF function.

Week 13

Topic: Speaker-Horning Brothers; Putting the pieces together-Sources & Uses, cash flow, returns, sensitivity

Assignments: 1) Write a 2-3 page memo describing the speaker's talk

2) Continue working on the model to calculate the Sources & Uses

Week 14

Topic: Putting the pieces together-Sources & Uses, cash flow, returns, sensitivity (cont.)

Assignments: Calculate the return for the project model created in the class so far

Week 15

Topic: Class discussion on the assigned book

Assignments: None