REAL ESTATE
FINANCE AND
INVESTMENTS
CERTIFICATION

PROGRAM SYLLABUS &
TEXTBOOK CONTENTS



REFAI CERTIFICATION PROGRAM SYLLABUS

REAL ESTATE FINANCE AND INVESTMENTS CERTIFICATION

Proceed in the order shown from top to bottom. All lessons include quizzes that count towards passing the course.

Module 1 Prerequisites	Prerequisite I: Discounted Cash Flow & Net Present Value Analyses Prerequisite II: Internal Rate of Return Prerequisite III: Amortization Fundamentals Prerequisite IV: REFM Excel for Real Estate Bootcamp
Module 2 Risks and opportunities; what is real estate?; international real estate	Chapter 1 | Introduction: Risks and Opportunities Chapter 2 | What is Real Estate and Who Owns It? Chapter 3 | International Real Estate Investing REFM Real Estate Finance Bootcamp
Module 3 Fundamentals of commercial leases	Chapter 4 | The Fundamentals of Commercial Leases REFM Comparative Lease Analysis Modeling from Landlord and Tenant Perspectives
Module 4 * Property-level projection modeling	Chapter 5 | Property-Level Pro Forma Analysis Chapter 6 | Financial Modeling
Module 5 Due diligence; capitalization rates	Chapter 7 | Real Estate Due Diligence Analysis Chapter 9 | The Use and Selection of Cap Rates
Midterm Exam	**Covers all material to date**

* Includes optional case study assignment.

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Module 6 Development pro forma and feasibility analysis	Chapter 10 | Development Pro Forma Analysis Chapter 11 | Development Feasibility Analysis REFM Office Building Development Modeling Tutorial
Module 7 Debt financing and transaction capital structuring	Chapter 14 | Should You Borrow? Chapter 15 | The Use of Debt and Mortgages Chapter 13 | Distressed Real Estate Loan and Bankruptcy Basics
Module 8 * Ground leases; real estate exit strategies	Chapter 17 | Ground Leases as a Source of Finance Chapter 18 | Real Estate Owner Exit Strategies
Module 9 Real estate companies; real estate private equity	Chapter 12 | Real Estate Company Analysis Chapter 21 | REITs and Liquid Real Estate Chapter 19 | Real Estate Private Equity Funds REFM Single Transaction Equity JV Waterfall Modeling Bootcamp
Module 10 Real estate cycles and market growth	Chapter 25 | Real Estate Cycles Chapter 8 | Analyzing Metropolitan Long-Term Growth Patterns
Module 11 Investment return profiles; market evolution	Chapter 20 | Investment Return Profiles Chapter 22 | The Forces Changing the Real Estate Industry Forever
Module 12 Corporate real estate, entrepreneurship and ethics	Chapter 23 | Corporate Real Estate Decision Making Chapter 24 | Some Observations on Real Estate Entrepreneurship Chapter 26 | There Are a Lot of Right Ways To Do It
Final Exam	**Covers all material in the course**

* Includes optional case study assignment.

THE REFAI PROGRAM TEXTBOOK



Title: Real Estate Finance and Investments: Risks and Opportunities

Current Edition: 5.1

Authors: Peter Linneman, PhD and Bruce Kirsch

Length: 457 pages

Chapters: 26

Additional Sections: 9

First Published: 2003

University Adoptions: 125+

Unique Features:

- Hands-on Excel modeling exercises integrated throughout
- Chapters on Due Diligence and Corporate Real Estate
- ARGUS platform overview.

SELECT UNIVERSITY TEXTBOOK ADOPTERS

The Wharton School
University of California Los Angeles
New York University
Columbia University
Georgetown University
University of Michigan
Ohio State University
University of Arizona
Villanova University
Drexel University
University of Georgia
Clemson University
University of Toronto
Arizona State University
College of Charleston
York University
University of Alabama
University of Memphis
Brigham Young University
Southern Methodist University
University of Hawai'i
University of California Irvine
Roosevelt University
University of Illinois at Chicago
Yale University
University of Washington
Texas A & M University

SELECT CORPORATE TEXTBOOK ADOPTERS

Blackstone Group
Related Companies
JBG Smith
CBRE Global Investors
Morgan Stanley
Tishman Speyer
Lubert-Adler Real Estate Funds
Freddie Mac
Macerich Company
WPT Industrial REIT
CIM Group
Goldman Sachs International
Shopoff Realty Investments
Regency Centers Corporation
IREI
Ernst & Young LLP
Eurohypo AG
Eastdil Secured
JP Morgan Securities
Angelo Gordon
Alliance Bernstein
CrossHarbor Capital Partners
MB Financial
Marcus & Millichap
CRE Management
Situs Group

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CHAPTER 1 | INTRODUCTION: RISKS AND OPPORTUNITIES

"Saying 'no' is as important as saying 'yes,' only tougher."

- Risks and Opportunities: That's What It's All About
- The Risks
- Operating Expenses
- Vacancy
- Natural Disaster
- Leasing
- Liquidity
- The Opportunities
- Operating Expenses
- Terminal Value
- Rental Growth
- Where You Should Focus Your Analysis
- Market Research
- Personal Decision
- Risk Parameterization

CHAPTER 2 | WHAT IS REAL ESTATE AND WHO OWNS IT?

"Overnight success almost always took 10-25 years."

- Real Estate is About Space
- Land
- Retail Properties
- Warehouse and Industrial Properties
- Office Properties
- Multifamily
- Hotels
- Self-Storage
- Real Estate is Many Different Industries
- Gross Versus Net Leasable Square Footage
- Occupancy and Vacancy
- Stacking Plan
- Who Owns U.S. Commercial Real Estate?



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CHAPTER 3 | INTERNATIONAL REAL ESTATE INVESTING

"You don't have to go far from home to lose a lot of money."

- Great Potential is Only That
- The Capital Shortage Myth
- The Land of the Rising Sun
- A Risky World
- The Old Soviet Empire
- South of the Border
- The United States of Europe
- India
- China
- Brazil

CHAPTER 4 | THE FUNDAMENTALS OF COMMERCIAL LEASES

"Analyze first; then leap."

- Economic Terms
- Rent
- Marketing Budget
- Utilities, Insurance, and Property Taxes
- HVAC – Heating, Ventilation, and Air Conditioning
- Security and Property Maintenance
- Tenant Improvements
- Free Rent
- Capital Costs
- Net Rent
- Non-Economic Terms
- Signage
- Going Dark
- Hours and Days of Operation
- Length of Lease
- Expansion Rights
- Usage Restrictions
- Sublet Rights
- Location Assignment
- Detailed Description of the Space
- Tenant Mix
- Parking
- Recourse and Security Deposit

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CHAPTER 5 | PROPERTY-LEVEL PRO FORMA ANALYSIS

"Run the numbers carefully but understand why these numbers will not occur."

- Lease-by-lease analysis
- Line Item Analysis
- Operating Income
- Gross Potential Rental Revenue
- Vacancy
- Percentage Rent/Overage
- Expense Reimbursements
- Ancillary Income
- Credit Loss/Bad Debt
- Operating Expenses
- Common Area Maintenance
- Property Taxes
- Insurance
- Utilities
- Property Management
- Net Operating Income
- Capital and Leasing Costs
- Tenant Improvements
- Leasing Commissions
- Capital Expenditures
- Unlevered Cash Flow
- Cap Ex Versus Depreciation
- Purchase Depreciation
- Depreciation of TIs and Cap Ex, Part 1
- Levered Cash Flow
- Loan Points
- Debt Service Expense
- Taxable Income
- Depreciation of TIs and Cap Ex, Part 2
- Amortization of Loan Points
- After-Tax Cash Flow to Equity
- Losses
- The Crazy 1980s



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CHAPTER 6 | FINANCIAL MODELING

"Believing a presented 26.24% IRR is silly; no one is 200 basis points accurate, much less 24 basis points accurate."

- What is Financial Modeling?
- Things Change for a Reason
- Leslie Court Apartments
- Base Rental Revenue
- Vacancy
- Ancillary Income
- Operating Expenses, Replacement Reserves and Cap Ex
- TIs and Leasing Commissions
- Sale Value
- Gross Sale Price, Sale Income Tax and Net Sales Proceeds

CHAPTER 7 | REAL ESTATE DUE DILIGENCE

"It's often a foregone conclusion left unchecked that comes back to bite you."

- What is Due Diligence?
- Wrong but Useful
- Little Mistakes + Big Numbers = Big Problems
- Title, Survey, Environmental, and Legal
- Revenue, Operating Expenses, and Capital Expenditures
- Capital Expenditure Needs
- Loan Documents
- Neighborhood and Market

CHAPTER 8 | ANALYZING METROPOLITAN LONG-TERM GROWTH PATTERNS

"Get a good pair of sunglasses and some sunblock if you want to build for the Boomers."

- A Nation of Constant Positive Population Growth
- Metropolitan County Population Growth
- 2030 Forecast
- Local Population Growth Insights
- Past Growth
- Economic Diversity
- Immigrant Presence
- Biology and Age Distribution
- Weather
- Vintage of Existing Housing Stock
- Coastal Adjacency and Zoning
- Educational Achievement
- Local Income and Sales Tax Rates
- Skilled Labor Force
- Population Density
- Regional Growth Variability
- Methodology

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CHAPTER 9 | THE USE AND SELECTION OF CAP RATES

"'What is the bet?' is the critical question."

- Basic Cap Rate Valuation
- Not Everyone Agrees
- Replacement Cost
- Gordon Model: Simple Cap Rate Estimation
- Let Your Common Sense Prevail
- Market Change
- Responding to the Market
- A Look at the Past
- Contractual Information

CHAPTER 10 | DEVELOPMENT PRO FORMA ANALYSIS

"Be prepared to adjust if you want to succeed."

- Development
- The Two Business Phases of Development
- Phase I: The Negative Cash Flow Business
- Phase II: The Positive Cash Flow Business
- Certainty of Cash Flows
- Revenue Risk Mitigation
- Pre-Leasing
- Pre-Sales
- Delay Risk
- Opportunity
- Options and Development
- The Develop Versus Buy Analysis Framework



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CHAPTER 11 | DEVELOPMENT FEASIBILITY ANALYSIS

"In the battle between fear and greed, greed wins about 80% of the time."

- Development Feasibility Assessment
- Simple Calculations
- Solve Backwards for Replacement Rent
- A Common Mistake
- Land Cost
- An Example: Anoop Court
- Hard Costs
- Forecasting Hard Costs
- Soft Costs
- Timing
- Design

CHAPTER 12 | REAL ESTATE COMPANY ANALYSIS

"People are the ultimate assets."

- Differences Between Property- and Company-Level Cash Flows
- Company-Level Net Income Projection
- Existing Properties Revenue Growth
- Acquisitions and Developments and Rates of Return
- Dispositions During the Period
- Fees from Noncombined Affiliates
- EBITDA
- Debt Service Expense
- Amortization and Depreciation and Impairments
- Minority Interest
- Value of a Company
- Funds from Operations
- Adjusted Funds from Operations
- DCF Valuation
- Cap Rate Valuation
- Net Asset Value

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CHAPTER 13 | DISTRESSED REAL ESTATE LOAN AND BANKRUPTCY BASICS

"Have both a professional and private life to balance the ups and downs of each."

- Distressed Loan Resolution Options
- Loan Restructuring
- Dissolution Options
- Bankruptcy
- Borrowers' Rights
- Bank of America Versus La Salle Street Partners
- Section 11.11B

CHAPTER 14 | SHOULD YOU BORROW?

"Embrace the 11th Commandment: thou shalt not take yourself so seriously."

- Sources of Debt Capital
- The Four Reasons to Use Debt in a Transaction
- Do Not Have Enough Money
- Diversification
- Interest Tax Shield
- Enhanced Equity Returns
- Capital Appreciation
- Cash Flow Return
- Positive Leverage
- Negative Leverage
- Japan and Positive Leverage
- How Much Should You Borrow?
- Mezzanine Finance



CHAPTER 15 | THE USE OF DEBT AND MORTGAGES

"Stick to what you know but keep learning in order to expand what you know."

- Interest Types and Short-Term Versus Long-Term Debt
- Interest Calculation Bases
- Key Loan Sizing Ratios
- Loan-to-Value and Loan-to-Cost
- Debt Yield
- Interest Coverage Ratio
- Debt Service Coverage Ratio
- Fixed Charges Ratio
- Other Key Loan Terms
- Common Negative Covenants
- Prepayment Penalty
- Distributions
- Operating Restrictions
- Additional Debt
- Common Positive Covenants
- Deposits
- EBIT, Cash Flow, or NOI
- Leases
- Loan Terms
- Secured
- Recourse
- Guarantees
- Receivables
- Draws
- Amortization
- Insurance
- Sweep
- Loan Points
- The Refi Decision
- Repayment Penalties
- Refinancing in a Down Market

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CHAPTER 16 | SOURCES OF LONG- AND SHORT-TERM DEBT

"The machine is rarely the problem; the people operating the machine are usually the problem."

- Capital Evolution
- Follow the Money
- How is a CMBS Issuance Created?
- How Do You Sell?
- Profit from the CMBS Packaging
- It's about Specialization
- Creating Tranches
- Default Dynamics
- The Evolution of the U.S. CMBS Market

CHAPTER 17 | GROUND LEASES AS A SOURCE OF FINANCE

"Judgment is far more important than intellect."

- Valuation of an Operating Asset Subject to a Ground Lease
- Method #1: Ground Lease Payment DCF
- Method #2: Ground Lease Payment Capitalization
- Method #3: Building Net Operating Income DCF
- Method #4: Building NOI Capitalization
- Financing of a Property Subject to a Ground Lease



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CHAPTER 18 | REAL ESTATE OWNER EXIT STRATEGIES

"Get rich slowly; it lasts longer."

- Why Exit?
- How to Exit
- Disposition
- Refinancing
- Like-Kind Exchange (1031 Exchange)
- Exchange for Public Company Shares
- Go Public

CHAPTER 19 | REAL ESTATE PRIVATE EQUITY FUNDS

"Find out who you are and stay true to your values."

- Evolution
- A Bit of History
- Who Are They?
- Investment Banks
- Investment Houses
- Dedicated Real Estate Players
- Return Waterfall
- Investor Protections

CHAPTER 20 | INVESTMENT RETURN PROFILES

"You don't need to be 100% right when you buy if you are invested for the long haul."

- Study #1: Investment Vehicle and Limited Partner Performance
- Qualitative Differences
- The Set-Up
- Market Scenario Comparisons
- The Impact of Sponsor Promotes
- Sensitivity Analyses
- Study #1 Conclusion
- Study #2: Property Risk and Opportunity

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CHAPTER 21 | REITS AND LIQUID REAL ESTATE

"It is easy to raise money if you're not the one doing it."

- History of REITs
- REIT IPO Basics
- REIT Income Tax Advantages and Operating Restrictions
- REIT Versus Publicly Traded Real Estate Company
- Public Versus Private and Large Versus Small
- Taxable REIT Subsidiary
- UPREIT Structure
- Return on Capital Versus Return of Capital

CHAPTER 22 | THE FORCES CHANGING THE REAL ESTATE INDUSTRY FOREVER

"Those who know how and when to adapt have the best chance of thriving."

- Real Estate is a Capital-Intensive Business
- The "Forces" Which Changed Real Estate
- Force #1: Shifting of Control of Capital
- Force #2: Consolidation of Capital
- Force #3: Prevailing of Basic Economics
- The Keys to Successful Long-Term Real Estate Ownership
- Managerial Vision and Ability to Sell It
- Low Capital Costs Relative to Competitors
- Lower Operating Costs Relative to Competitors
- Lower Overhead Costs Than Competitors
- Enhanced Revenues Relative to Competitors
- Successful Risk Management
- Operating Efficiency
- Proof of the "Forces" at Work
- Growth in Company Size, Liquidity, and Prominence
- No Reversion to Excessive Leverage
- Growth in Transparency
- Is Bigger Better?

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CHAPTER 23 | CORPORATE REAL ESTATE DECISION MAKING

"Why ever do less than the best you can?"

- What Type of Space Do I Need?
- Where Should I Locate?
- How Much Space Do I Need?
- Should I Own or Rent?
- Faulty Own Versus Rent Model
- What Is The Problem?
- Corrected Own Versus Rent Model
- One Size Does Not Fit All
- Propensity for Corporate Ownership of Real Estate
- Synthetic Leases
- For How Long Should I Lease?
- The Corporation of You

CHAPTER 24 | SOME OBSERVATIONS ON REAL ESTATE ENTREPRENEURSHIP

"When asked if real estate entrepreneurs are born or made, my answer is always Yes."

- Are There Entrepreneurial Traits?
- What Makes Sammy Run?
- Better, Faster, Cheaper
- What Are the Risks?
- Raising Capital



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CHAPTER 25 | REAL ESTATE CYCLES

"Don’t lose your cool about things you cannot possibly control."

- What Are Cycles?
- Contractual Obligations and Market Frictions
- Demand Adjustments
- Structural Office Demand Headwinds?
- Permits and Regulations
- Capital Cycle
- What Led to the 2008-2009 Financial Crisis

CHAPTER 26 | THERE ARE A LOT OF RIGHT WAYS TO DO IT

"Do the right thing simply because it is the right thing to do."

- Ethics in Real Estate?
- Right and Wrong
- Bribes
- But Everybody is Doing It!
- Perverse Incentives
- Favoritism
- Do Not Expect Thanks
- Conflict of Interest

MEET THE AUTHOR: **PETER LINNEMAN, PHD**



Peter Linneman, PhD
CEO of Linneman Associates

For over 40 years, Dr. Peter Linneman's unique blend of scholarly rigor and practical business insight has won him accolades from around the world, including PREA's prestigious Graaskamp Award for Real Estate Research, Wharton's Zell-Lurie Real Estate Center's Lifetime Achievement Award, Realty Stock Magazine's Special Achievement Award, being named "One of the 25 Most Influential People in Real Estate" by Realtor Magazine and inclusion in The New York Observer's "100 Most Powerful People in New York Real Estate".

After receiving both his Masters and Doctorate in Economics under the tutelage of Nobel Prize winners Milton Friedman, Gary Becker, George Stigler, Ted Schultz and Jim Heckman, Peter had a distinguished academic career at both The University of Chicago and the Wharton School of Business at the University of Pennsylvania. For 35 years, he was a leading member of Wharton's faculty, serving as the Albert Sussman Professor of Real Estate, Finance and Public Policy as well as the Founding Chairman of the Real Estate Department and Director of the prestigious Zell-Lurie Real Estate Center. During this time, he was co-editor of The Wharton Real Estate Review. In addition, he published over 100 scholarly articles, four editions of the acclaimed book Real Estate Finance and Investments: Risks and Opportunities, and the widely read Linneman Letter quarterly report.

Peter's long and ongoing business career is highlighted by his roles as Founding Principal of Linneman Associates, a leading real estate advisory firm; CEO of American Land Fund; and CEO of KL Realty. For more than 35 years, he has advised leading corporations and served on over 20 public and private boards, including serving as Chairman of Rockefeller Center Properties, where he led the successful restructuring and sale of Rockefeller Center in the mid-1990s.

LINNEMAN ASSOCIATES



Wharton
University of Pennsylvania

American Land Fund

MEET THE AUTHOR: **BRUCE KIRSCH, REFAI**



Bruce Kirsch

CEO of Real Estate
Financial Modeling

As the founder of Real Estate Financial Modeling (REFM), Bruce Kirsch has trained thousands of students and professionals around the world in Excel-based projection analysis. In addition, REFM's self-study products, Excel-based templates and its Valuate® property valuation and investment analysis software are used by more than 150,000 professionals. Mr. Kirsch's firm has assisted with modeling for the raising of billions of dollars of equity and debt for individual property acquisitions and developments, as well as for major mixed-use projects and private equity funds. Mr. Kirsch has also maintained a blog on real estate financial modeling, Model for Success, authoring more than 500 posts.

Mr. Kirsch began his real estate career at CB Richard Ellis, where he marketed highrise New York City office buildings for re-development in the Midtown Manhattan Investment Properties Institutional Group. After CBRE, Mr. Kirsch was recruited to lead acquisitions at Metropolis Development Company, and later joined The Clarett Group, a programmatic development partner of Prudential.

While at The Clarett Group, Mr. Kirsch was responsible for making development site recommendations for office, condominium and multi-family properties in the greater Washington, D.C. metropolitan area. In addition, Mr. Kirsch had significant day-to-day project management responsibilities for the entitlement, financing and marketing of the company's existing D.C.-area development portfolio.

Mr. Kirsch holds an MBA in Real Estate from The Wharton School of the University of Pennsylvania, where he was awarded the Benjamin Franklin Kahn/Washington Real Estate Investment Trust Award for academic excellence. Prior to Wharton, Mr. Kirsch performed quantitative equity research on the technology sector at The Capital Group Companies. Mr. Kirsch served as an Adjunct Faculty member in real estate finance at Georgetown University School of Continuing Studies. Mr. Kirsch graduated with a BA in Communication from Stanford University.

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