

# Table of Contents

---

|                              |      |
|------------------------------|------|
| <b>Overview</b> .....        | ix   |
| <b>Course Schedule</b> ..... | xiii |

## **SECTION 1**

### **Introduction**

#### **Part 1. Introduction to the Income Capitalization Approach**

|   |    |
|---|----|
| Preview Part 1.....                                       | 1  |
| Market Value .....  | 3  |
| Anticipation and Other Relevant Economic Principles ..... | 4  |
| What Is Capitalization? .....                             | 5  |
| Review Part 1 .....                                       | 9  |
| Review Quiz .....   | 11 |

#### **Part 2. Time Value of Money and Related Concepts**

|   |    |
|---|----|
| Preview Part 2.....                                       | 13 |
| Time Value of Money .....                                 | 15 |
| Simple and Compound Interest .....                        | 21 |
| Overview to Financial Functions (or factors) of One ..... | 33 |
| The First of the Six Functions of One .....               | 35 |
| Review Part 2 .....                                       | 39 |

#### **Part 3. Time Value of Money and Related Concepts, cont.**

|  |    |
|--|----|
| Preview Part 3.....                          | 41 |
| The Second of the Six Functions of One ..... | 43 |
| The Third of the Six Functions of One.....   | 46 |
| The Fourth of the Six Functions of One.....  | 53 |
| The Fifth of the Six Functions of One .....  | 56 |
| The Last of the Six Functions of One .....   | 59 |
| Review Part 3 .....                          | 63 |
| PRACTICE TEST—Section 1 .....                | 65 |

## SECTION 2

### Part 4. Tables, Six-function Summary, and Other Level-Income Problems

|   |    |
|---|----|
| Preview Part 4.....                                   | 69 |
| Use of Tables .....                                   | 71 |
| Six-Function Summary .....                            | 75 |
| Loan Balances.....                                    | 75 |
| Mortgage Capitalization Rate ( $R_M$ ).....           | 77 |
| Combination Level Annuity Problems .....              | 79 |
| Solving for Term ( $n$ ) and Yield Rate ( $i$ ) ..... | 80 |
| Review Part 4 .....                                   | 83 |
| Review Quiz .....                                     | 85 |

### Part 5. Review and Overview of Income Capitalization

|  |    |
|--|----|
| Preview Part 5.....  | 87 |
| Review and Overview of Income Capitalization Approach .....  | 89 |
| Bundle of Rights in the Income Capitalization Approach ..... | 94 |
| Levels of Income.....  | 95 |
| Review Part 5 .....  | 97 |
| Review Quiz .....  | 99 |

### Part 6. Analyzing Income: Income and Leases Introduction

|   |     |
|---|-----|
| Preview Part 6.....                           | 101 |
| Income and Leases Introduction.....           | 103 |
| Potential Gross Income ( $PGI$ ).....         | 103 |
| Types of Rent and Related Rent Concepts ..... | 104 |
| Review Part 6 .....                           | 115 |
| Practice Test Section 2.....                  | 117 |

## SECTION 3

### Part 7. Analyzing Income: Lease Characteristics and Concepts

|                            |     |
|----------------------------|-----|
| Preview Part 7.....        | 123 |
| Lease Characteristics..... | 125 |
| Other Lease Concepts.....  | 130 |
| Market Rent Estimates..... | 130 |
| Review Part 7 .....        | 133 |
| Review Quiz Part 7 .....   | 135 |

## **Part 8. Vacancy and Collection Loss and Effective Gross Income**

|                                       |     |
|---------------------------------------|-----|
| Preview Part 8.....                   | 137 |
| Vacancy and Collection Loss.....      | 140 |
| Types of Vacancy.....                 | 142 |
| Collection Loss.....                  | 146 |
| Vacancy and Collection Loss Data..... | 147 |
| Other Income.....                     | 150 |
| Effective Gross Income (EGI).....     | 150 |
| Review Part 8.....                    | 153 |

## **Part 9. Expenses, Reimbursements, Replacement Allowances, Expense Tests of Reasonableness and Below-the-Line Expenses**

|   |     |
|---|-----|
| Preview Part 9.....   | 155 |
| Operating Expenses.....   | 157 |
| Fixed Expenses.....   | 161 |
| Variable Expenses.....  | 163 |
| Reimbursements.....   | 165 |
| Replacement Allowance (formerly and still referred to as <i>Reserves</i> )..... | 168 |
| Total Operating Expenses.....   | 174 |
| Net Operating Income ( <i>I<sub>o</sub></i> , or <i>NOI</i> ) Defined.....      | 175 |
| Tests of Reasonableness.....  | 175 |
| Leasing Commissions and Tenant Improvements.....                                | 178 |
| Review Part 9.....  | 181 |
| PRACTICE TEST—Section 3.....  | 183 |

## **SECTION 4**

### **Part 10. Industrial Building Case Study**

|                          |     |
|--------------------------|-----|
| Preview Part 10.....     | 187 |
| Overview.....            | 190 |
| Assignment.....          | 190 |
| Case Study Problems..... | 195 |
| Review Part 10.....      | 199 |

### **Part 11. Retail Case Study**

|                          |     |
|--------------------------|-----|
| Preview Part 11.....     | 201 |
| Overview.....            | 204 |
| Assignment.....          | 204 |
| Case Study Problems..... | 208 |
| Review Part 11.....      | 213 |

## **Part 12. Financial Function, Direct Capitalization, and Operating Income Review**

|                               |     |
|-------------------------------|-----|
| Preview Part 12.....          | 215 |
| Review Part 12 .....          | 217 |
| PRACTICE TEST—Section 4 ..... | 219 |

## **SECTION 5**

### **Part 13. Converting Income into Value: Deriving and Applying Multipliers and Overall Capitalization Rates**

|                                      |     |
|--------------------------------------|-----|
| Preview Part 13.....                 | 225 |
| Types of Multipliers and Rates ..... | 227 |
| Direct Capitalization .....          | 230 |
| Review Part 13 .....                 | 251 |

### **Part 14. Converting Income into Value: Deriving and Applying Capitalization Rates and Calculating Reversions**

|  |     |
|--|-----|
| Preview Part 14.....                         | 255 |
| Definition (Debt Coverage Ratio [DCR]) ..... | 257 |
| Reversion .....                              | 263 |
| Loading Capitalization Rates .....           | 266 |
| Review Part 14 .....                         | 271 |

### **Part 15. Converting Income into Value: Deriving Capitalization Rates Using Band of Investment Techniques**

|  |     |
|--|-----|
| Preview Part 15.....   | 273 |
| Built-up and Blended Overall Rates: Band of Investment ..... | 275 |
| Review Part 15 .....   | 287 |
| PRACTICE TEST—Section 5 .....                                | 289 |

## **SECTION 6**

### **Part 16. Residual Techniques**

|  |     |
|--|-----|
| Preview Part 16.....   | 299 |
| Overview of Residual Techniques.....   | 302 |
| Physical Division: Land and Building Residuals.....  | 302 |
| Weaknesses of Using Land and Building Residual Analysis to<br>Support Highest and Best Use Conclusions ..... | 318 |
| Review Part 16 .....   | 321 |
| Review Quiz .....  | 323 |

**Part 17. Mortgage and Equity Residual Analysis**

Preview Part 17.....325  
Financial Division: Mortgage and Equity Residual.....327  
Review Part 17 .....337  
Review Quiz .....339

**Part 18. Appropriate Leasehold/Leased Fee Residuals and Summary**

Preview Part 18.....341  
Legal Division: Leasehold and Leased Fee .....343  
Review Part 18 .....353  
PRACTICE TEST—Section 6 .....355

**SECTION 7**

**Part 19. Band of Investment and Residual Review**

Preview Part 19.....365  
Characteristics of Band of Investment and Residual Problems.....367  
Problem Recognition for Band of Investment and Residual Problems.....367  
Solving Band of Investment and Residual Problems .....371  
Other Configurations for Band of Investment and Residual Problems.....385  
Review Part 19 .....387

**Part 20. Review of Income Capitalization and Other Exam Preparation**

Preview Part 20.....389  
Convention for Symbols.....391  
Rates, Ratios, Relationships, and Synonyms.....392  
Summary of Options Available for Processing Income and Converting Income  
to Value Using Factors and Rates in Direct Capitalization.....393  
Six Functions of One Summary and Review .....394  
Problem Recognition Tips .....395  
Problem-Solving Flow Chart .....397  
Review Part 20 .....403

**Part 21. Extraction of Rates & Ratios from a Comparable Sale  
(Office Building Case Study) and Summary of Exam Tips**

|   |     |
|---|-----|
| Preview Part 21.....                          | 405 |
| Overview.....                                 | 408 |
| Case Study Problems .....                     | 409 |
| Compilation of Calculator and Exam Tips ..... | 415 |
| Review Part 21 .....                          | 417 |

**SECTION 8**

**Part 22. Exam Content Review**

|                              |     |
|------------------------------|-----|
| Preparing for the Exam ..... | 419 |
|------------------------------|-----|

# Overview

---

## Course Description

After a brief review and introduction, *General Appraiser Income Approach/Part 1* begins with a look at of the time value of money, compound interest, the six financial functions of a dollar and like concepts. A thorough, detailed analysis of gross income including leases and the various expenses appropriately deducted from gross income follows, and includes case studies of several income property types. Direct capitalization of net operating income and its components into value is then presented using overall capitalization rates, band of investment, and residual techniques. Substantial class time is devoted to practicing the taught concepts to prepare the participant for the exam.

## Learning Enhancements

The course has been designed with a variety of elements to enhance your learning experience.

- **Preview.** To give you a taste of what is to come, you will find a *Preview* page that begins each Part. Included on the *Preview* page is a brief overview of the content, learning objectives to consider as you move through the content, and learning tips that will assist you in understanding the information you're about to learn.
- **Learning Objectives.** Each learning objective covers essential information you need to know to fully understand the concepts in the course. Look them over before the Part begins so that you have a frame of reference as you move through the material. At the end of each Part, reread the objectives. Are you able to do what is stated? If not, this is the time to ask your instructor for help. Or, review the concepts that you do not understand.
- **Examples, Problems, Case Studies.** To supplement the discussions, we've included examples, problems, and case studies. The examples will help you visualize what is being discussed. Problems and case studies provide you with the opportunity to practice what you are learning.
- **Discussion & Thought Questions.** Discussion and thought questions provide you with additional ideas to consider as you absorb what you are learning.
- **Fill-in-the-Blanks.** It is a proven fact that when you write something down, you are more apt to remember it. The Course Handbook has "missing" content in the outline that you will need to add in the space provided in your handbook as the instructor goes over the content.

- **Review.** Each Part concludes with a review. Included in the review are the learning objectives and key terms and concepts that have been covered. Also, we've provided recommended readings from textbooks that will reinforce what you have learned in class.
- **Review Quizzes.** Short review quizzes are included at the end of most Parts. By answering the true/false questions, fill-in-the-blanks, or multiple-choice questions, etc., you will know whether or not you really comprehend the information that was covered in that Part.
- **Section Tests.** Sections Tests are included at the end of each Section in the "Review." The questions are similar to the types of questions you might find on the exam.

## **Additional Notes Regarding Effective Learning in this Course**

The exercises for this course have been carefully developed. To assist you in learning, see additional notes below.

- *Fill-in-the-blank.* Definitions are given for all terms, but some require you to write in the term. The terms are shown on the instructor's PowerPoint slides and in the Solutions Booklet.
- *Examples.* These are usually fully answered in the Course Handbook; occasionally they might be shown on PowerPoint as a minor fill-in-the-blank exercise.
- *Problems.* Questions are presented in the Course Handbook. Solutions are provided in the Solutions Booklet
- *Discussion Questions.* Questions are posed in the Course Handbook. However, they are NOT answered in the Solutions Booklet. Be sure to take notes on the ensuing discussion or from the PowerPoint slides.
- *Thought Questions.* Questions are posed in the Course Handbook, while answers are included in the Solutions Booklet
- *Case Studies.* Problems are presented in Section 4 of the Course Handbook. Solutions are shown in the instructor's PowerPoint slides and in a Case Study Solution handout that will be distributed upon completion of the case studies.
- *Practice Quizzes.* Quiz questions follow most Parts in the Course Handbook. Answers are in the Solutions Booklet
- *Practice Tests.* Test questions are included at the end of each Section. They are presented in multiple-choice format. Answers are included in the Solutions Booklet

## Classroom Guidelines

To make the classroom environment a positive experience for everyone attending, we have some guidelines for your consideration

- 100% attendance is required. No exceptions.
- Limit use of laptops to classroom projects.
- Communicate with business associates during break time instead of class time.
- Put away reading materials such as newspapers and books that are not used in class.
- Silence cell phones.
- Use recording devices only if prior permission has been granted.
- Refrain from ongoing conversations with those seated near you and other distracting behavior.

## General Information

- **Calculators.** A financial calculator is required. The accepted model used in the course is the HP-12C.<sup>1</sup>
- **Breaks.** There will be two 10-minute breaks during the morning session and two 10-minute breaks during the afternoon session unless noted otherwise by the course sponsor. The lunch break is one hour.
- **Attendance sheets** will be distributed during class to verify your attendance during the morning and afternoon sessions.
- **Certificates of completion** will be mailed after completion of the course, and attendance during the entire course is required.

---

1. One feature of the HP-12C: Tough construction: *One HP-12C was used by a zoo keeper to calculate feed mixtures. The zoo keeper dropped the calculator and it was consumed by a hippopotamus. The calculator survived the hippo's digestive process as well as the washing that followed.* (From the Museum of HP Calculators, [www.hp12cmuseum.org/hp12c.htm](http://www.hp12cmuseum.org/hp12c.htm))

## **Recommended Texts**

- *The Appraisal of Real Estate*, 13th ed.
- *The Dictionary of Real Estate Appraisal*, 5th ed.
- *HP-12C Financial Calculator User's Guide*
- *Rates and Ratios Used in the Income Capitalization Approach*
- *Mathematics for Real Estate Appraisers*
- *Capitalization Theory and Techniques Study Guide*, 3rd ed.