Course 331 – Mass Appraisal Practices and Procedures

Course Description

This course is designed to build on the subject matter covered in Course 300 – Fundamentals of Mass Appraisal and prepare the student to take the more advanced mass appraisal courses. It teaches the student how to use Excel and SPSS to analyze data and apply it. Much of the emphasis will be on data accumulation and analysis primarily directed toward the cost approach. Along the way, the student will learn how to use the graphing and analysis tools within Excel for ratio studies in addition to supporting existing cost schedules or building new ones. The course involves four days of classroom instruction and a final examination. Although it is not required, students are encouraged to obtain a copy of the Fundamentals of Mass Appraisal textbook for reading that will supplement classroom instruction.

Objectives

Upon completion of Chapter 1, you will be able to:

- Define and explain mass appraisal.
- Describe the objectives of mass appraisal.
- Know that both IAAO and the Appraisal Foundation publish mass appraisal standards.
- Know IAAO standards for the level and uniformity of assessments.
- Explain the role of models in mass appraisal.
- Distinguish between model specification and calibration.
- Define model “coefficients” and “terms”.
- Distinguish between additive, multiplicative, and hybrid models.
- Recognize and provide simple examples of the three model types.
- Briefly describe the advantages of each model type.
- Describe alternative reappraisal cycles.
- Describe the advantages and disadvantages of each approach.
- Describe key components of an effective mass appraisal system.
- Know IAAO accuracy standards for measurement data, objective categorical data, and subjective categorical data.
- Describe the basic steps for carrying out a mass appraisal.

Upon completion of Chapter 2, you will be able to:

- Explain why markets arise.
- Distinguish various types of markets: monopolies, oligopolies, regulated markets, free markets, and efficient markets.
- Describe the requirements for “perfect” market.
- Explain why real estate markets are not perfect markets.
- Define when a market is in equilibrium.
- Understand that markets in equilibrium imply “normal” but not “excess” profits.
- Provide examples of local, regional, national, and worldwide markets.
- Describe the typical real estate cycle: expansion, rising prices, increases in interest rates, reduced demand and

contraction.
• Explain why real estate prices can be volatile.
• Understand the concept of supply and demand curves and know how changes in price affect quantity supplied and quantity demanded.
• Understand that prices are determined by the interaction of supply and demand.
• Describe several components of quantity supplied (as evidenced by offers to sell).
• Describe several components of quantity demanded (as evidenced by offers to buy).
• Distinguish the difference between competing and complementary goods.
• Understand the key role interest rates play in real estate markets.

Upon completion of Chapter 3, you will be able to:
• Identify the three major categories of property characteristics required for mass appraisal.
• Identify the three major categories of market data required for mass appraisal.
• List property features typically important for residential properties.
• List property features typically important for commercial properties.
• Know which valuation approaches use sales, cost, and income data.
• Know the preferred and supplemental sources of sales data.
• List three methods of obtaining sales data from buyers and sellers.
• Know the primary categories of sales that are generally invalid for valuation analysis and ratio studies.
• Know when foreclosure-related sales should be considered potentially usable.
• Understand when sales prices may require adjustments.
• List alternative sources of income data.
• Know which income approach calculations require expense information.
• Distinguish between quantitative, qualitative (discrete), and binary data.
• Describe several methods for evaluating the adequacy and accuracy of assessment data.
• Describe several ways to help ensure the accuracy and consistency of property data.
• Define data integrity and consistency edits.
• Describe the functionality of the following data collection tools and options: handheld data entry devices, digital photos, video imagery, aerial photos and GIS, laser measuring devices, and oblique imagery.

Upon completion of Chapter 4, you will be able to:
• Explain the role and importance of stratification in mass appraisal.
• Explain the ramifications of failing to stratify property markets adequately.
• Identify the two primary bases of stratification in mass appraisal.
• Explain the role of market areas and neighborhoods in residential models.
• List guidelines for creating market areas.
• List guidelines for delineating residential neighborhoods.
• Describe pitfalls of over-stratification.
• Identify classes of commercial properties for which separate valuation analyses are commonly conducted.
• Identify common residential sub-classes.
• Explain differences in retail, office, and warehouse/industrial neighborhoods.
• Explain how GIS can be used to help define neighborhoods.
• Know what response surface analysis is and how it can be used in location analysis.
• Know what cluster analysis is and how it can be used to help define market areas and neighborhoods.

Upon completion of Chapter 5, you will be able to:
• Describe how worldwide, national, and regional factors affect local property markets.
• Understand how economic, social, governmental, and environmental forces affect property values.
• Identify the three economic stages used to characterize market areas and neighborhoods.
• List examples of site-specific factors that positively and negatively impact property values.
• Explain why sales should be adjusted to the valuation date.

• Understand the difference between straight-line and compounding adjustments.
• Know how to apply straight-line and compounding adjustments.
• Describe four methods for tracking price trends in mass appraisal.
• Describe the strengths and weaknesses of each method.
• Explain the different ways of extracting the indicated percentage change in property values from a scatter graph.
• Describe several transformations for handling nonlinear trends.
• Understand how a price index is determined.
• Understand how time adjustment factors can be derived from a price index.
• Explain the role of ratio studies in mass appraisal.
• Know how to interpret the coefficient of price-related bias (PRB).
• Define a confidence interval and explain the role of confidence intervals in ratio studies.
• Explain how to interpret a box plot.
• Describe how scatter graphs and box plots can assist in evaluating assessment equity.
• Describe how market adjustment factors can be determined from ratio studies and explain when they are and are not appropriate.
• Understand how ratio studies can help refine valuation models and schedules.

Upon completion of Chapter 6, you will be able to:
• Describe the appraisal principle of substitution.
• Know the three components of the cost approach.
• Explain the differences between historical, reproduction, and replacement cost.
• Know how demand factors can be incorporated into the cost approach.
• Explain the importance of accurate land values in mass appraisal.
• Describe the preferred method of land valuation.
• Describe methods that can assist in land valuation in the face of limited vacant land sales.
• Specify the mathematical structure of a hybrid cost model.
• List relevant costs included in replacement cost new (RCN).
• Describe the four methods of estimating replacement costs.
• List desirable features of a cost manual.
• Describe three alternatives a jurisdiction has for acquiring and maintaining cost models.
• Note the advantages and disadvantages of each alternative.
• Know how to develop cost trend factors from a construction cost index.
• List several alternatives for acquiring cost trend factors.
• Describe how cost trend factors can be developed from local cost data.
• Define depreciation and the three types of depreciation.
• Explain why some structures depreciate more (less) rapidly than others.
• Describe how depreciation can be derived from market analysis.
• Explain how an assessor can evaluate the reliability cost approach values.
• Describe how to calculate market adjustment factors.
• Explain the role of market adjustment factors in the cost approach.

Upon completion of Chapter 7, you will be able to:
• Describe the structure of a residential cost model.
• Describe the advantage and disadvantages of developing cost models in-house.
• Give the two bases on which residential properties are commonly stratified in the cost approach.
• Know what items and costs are included in base rates.
• Explain how base rates are determined.
• Describe how variations from base specifications are handled.
• Explain why building costs generally fall as size increases.
• Explain how size adjustment factors are calculated.
• Describe how sales ratio analyses can help to evaluate and refine depreciation schedules.

- Explain how depreciation adjustments can be derived from MRA models.
- List several advantages of formula-driven cost models.
- Describe how cost rates can be converted to multipliers.
- Explain how size adjustment factors can be approximated with an equation.
- Explain how MRA can be used to help market-calibrate cost models.

Timetable

Topic	Time Requirement	Day Covered
Chapter 1		
Definition, Scope, and Objectives of Mass Appraisal	20 Minutes	Monday AM
Mass Appraisal Models	45 Minutes	Monday AM
Mass Appraisal Cycles	45 Minutes	Monday AM
Components of Effective Mass Appraisal	60 Minutes	Monday AM
Steps in Mass Appraisal	45 Minutes	Monday AM
Review and Discussion Questions	30 Minutes	Monday PM
Chapter 2		
Real Estate Markets	20 Minutes	Monday PM
Supply, Demand, and Price	40 Minutes	Monday PM
Determinants of Supply and Demand	40 Minutes	Monday PM
Chapter 3		
Data Required for Mass Appraisal	45 Minutes	Monday PM
Sales Data	60 Minutes	Monday PM/Tuesday AM
Cost Data	30 Minutes	Tuesday AM
Income Data	30 Minutes	Tuesday AM
Property Characteristics Data	60 Minutes	Tuesday AM
Data Collection Tools and Options	30 Minutes	Tuesday AM
Discussion and Review Questions	45 Minutes	Tuesday PM
Chapter 4		
Importance of Bases of Stratification	30 Minutes	Tuesday PM
Stratification by Property Type	30 Minutes	Tuesday PM
Market Areas and Neighborhoods	50 Minutes	Tuesday PM

Topic	Time Requirement	Day Covered
Roles of GIS	30 Minutes	Tuesday PM
Cluster Analysis	20 Minutes	Tuesday PM
Discussion and Review Questions	30 Minutes	Tuesday PM
Chapter 5		
Market Forces and Factors	60 Minutes	Tuesday PM
Tracking Price Trends	195 Minutes	Wednesday AM/PM
Role of Ratio Studies	190 Minutes	Wednesday PM
Review Questions and Discussions	40 Minutes	Thursday AM
Chapter 6		
Principles of the Cost Approach	30 Minutes	Thursday AM
Land Valuation	55 Minutes	Thursday AM
Replacement Costs, Schedules and Manuals	30 Minutes	Thursday AM
Cost Trend Factors	30 Minutes	Thursday AM
Depreciation Analysis	55 Minutes	Thursday PM
Testing of Cost Values	30 Minutes	Thursday PM
Discussion and Review Questions	30 Minutes	Thursday PM
Chapter 7		
Structure of Residential Cost Models	20 Minutes	Thursday PM
Stratification, base Specifications, and Unit Costs	30 Minutes	Thursday PM
Capturing Economies of Scale	25 Minutes	Thursday PM
Depreciation Adjustments	45 Minutes	Thursday PM
Formula-Driven Cost Models	25 Minutes	Thursday PM
Market Adjustments	25 Minutes	Friday AM
Review Questions	20 Minutes	Friday AM