This course introduces mass appraisal and is a prerequisite for the 300 series of courses offered by IAAO. This course will cover:

• The similarities and differences between single-property appraisal and mass appraisal
• The components and processes of a mass appraisal system including data requirements and analysis
• An introduction to statistics
• How to develop and use assessment ratio studies in mass appraisal based upon the 2007 IAAO Standards on Ratio Studies
• The use of the Cost Approach, Sales Comparison Approach, and Income Approach to value models in mass appraisal
• Aspects to consider in selecting mass appraisal system
• CAMA management issues to be addressed in mass appraisal
Objectives

On completion of Chapter 1, the student should be able to:
• Understand mass appraisal and list differences and similarities between mass and single property appraisal.
• Trace the beginning and evolution of mass appraisal.
• Understand the features of mass appraisal.
• Define a model and explain the objectives of mass appraisal models.
• List basic supply and demand factors in real estate markets.
• Understand the basic structures of cost, sales comparison, and income models.
• Distinguish between model specification and calibration.
• Graph supply and demand curves.

On completion of Chapter 2, the student should be able to:
• Identify and describe the three components that make up the Property Tax System.
• Identify and describe the four components of a Computer Assisted Mass Appraisal System (CAMA).
• Describe the four basic files in a Computer Assisted Mass Appraisal System (CAMA).
• Identify the ten steps in reappraisal.
• Distinguish between batch and on-line processing.
• Identify and describe the steps in a reappraisal involving a new CAMA system.
• Understand the types of property characteristics and how to collect data.

On completion of Chapter 3, the student should be able to:
• Understand why assessment data must be accurate.
• Know several methods for evaluating data accuracy.
• Distinguish between continuous, discrete, and binary data, giving examples of each.
• Know several factors important in the design of property record cards.
• Describe the type of training data collectors should receive.
• Know several elements of good protocol in field data collection.
• Estimate the number of staff positions required for a reappraisal given:
  - Number of parcels to be worked
  - Production rate per day
  - Time available
• Estimate the time required for data collection effort given:
  - Number of parcels to be worked
  - Available staff
  - Production rate per day
On completion of Chapter 4, the student should be able to:

- Array data in order of magnitude.
- Develop and interpret frequency distributions.
- Develop a graphical representation of a frequency distribution.
- Calculate common measures of central tendency.
- Calculate common measures of dispersion.
- Use cross-tabulations to show the distribution of values for two binary or discrete variables.
- Develop scatter diagrams showing the relationship between two continuous variables.
- Use a polygon (line chart) to show several variables simultaneously.
- Use a polygon to show the same variable for different strata.
- Make three-way variable comparisons using contingency tables.

On completion of Chapter 5, the student should be able to:

- Define the purpose of ratio studies.
- List three means of obtaining sales information from buyers and sellers and the advantages and disadvantages of each.
- Describe sales that are commonly excluded from ratio studies.
- Explain two methods of adjusting sales for personal property and special financing.
- Describe an array, frequency distribution, line chart, (polygon) bar chart, (histogram) and scatter diagram and understand their use in ratio studies.
- Calculate the median, mean, and weighted mean for sales ratio or other data.
- Calculate the coefficient of dispersion (COD) and coefficient of variation (COV).
- Explain the coefficient of dispersion (COD).
- Explain the relationship between the coefficient of variation and a normal curve.
- Distinguish between horizontal and vertical equity and explain how each is measured.
- Know performance standards contained in the IAAO Standard on Ratio Studies.

On completion of Chapter 6, the student should be able to:

- Determine the structure of the cost approach in mass appraisal.
- Distinguish between reproduction and replacement cost.
- List the basic steps in applying the cost approach.
- List sources of tables for the cost approach.
- Compute and apply time and location adjustments in the cost approach.
- Describe the quantity survey method of cost estimation and its role in mass appraisal.
- Describe the unit-in-place method of cost estimation and its role in mass appraisal.
- Describe the comparative unit method of cost estimation and its role in mass appraisal.
- Describe the trended original cost method of cost estimation and its role in mass appraisal.
- List desirable features of cost manuals.
On completion of Chapter 7, the student should be able to:

- Define the structure of the sales comparison approach as applied in single property appraisal.
- Define additive, multiplicative, and hybrid model structures used in mass appraisal.
- Describe the three general approaches to treating location in sales comparison models.
- Explain how cluster analysis can be used in mass appraisal.
- List four steps in finding benchmark per unit values in the sales comparison approach.
- Explain how to evaluate the reliability of benchmark per unit values produced by per unit value analysis.
- Describe multiple regression analysis (MRA) and its role in mass appraisal.
- List strengths and limitations of MRA in mass appraisal.
- Describe adaptive estimation procedure (AEP) and its similarities.
- Describe automated sales comparison analysis and its role, advantages, and limitations in mass appraisal.
- Describe global response surface analysis and its use in mass appraisal.

On completion of Chapter 8, the student should be able to:

- Define the basic structure of the income approach.
- Describe the two basic approaches to developing gross income multipliers and overall rates in mass appraisal applications of the income approach.
- Estimate vacancy ratios.
- Describe how an appraiser can evaluate the reliability of market rents, expense ratios, income multipliers, on overall rates developed through stratification.
- Identify the dependent variable in a gross rent model, expense ratio model, gross rent multiplier model, and overall rate model.
- Identify important dependent variables to include in gross rent expense ratio, gross rent multiplier, and overall rate models.
- List allowable expenses for property tax purposes and explain proper treatment of property taxes in income models.
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<td>General Appraisal Process Common to Mass/Single Property</td>
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<td>Evolution of Mass Appraisal</td>
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<td>Features of Mass Appraisal</td>
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<td>Models and Mass Appraisal</td>
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<td>Economic Basis of Model Building</td>
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<tr>
<td>Model Structure for the Three Approaches</td>
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<tr>
<td>Basic Steps in Model Building</td>
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<td>Calibration of the Three Approaches</td>
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<td>Simple General Cost Model</td>
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<td><strong>Chapter 2</strong></td>
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<td>Components of a Mass Appraisal System</td>
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<td>Ten Steps in Reappraisal</td>
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<td>CAMA System</td>
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<td>Property Record Forms</td>
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<td><strong>Purpose and Uses of Ratio Studies</strong></td>
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<td><strong>Cost Tables and Schedules</strong></td>
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<td><strong>Multiple Regression Analysis (MRA)</strong></td>
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<td><strong>Adaptive Estimation Procedure (AEP or &quot;Feedback&quot;)</strong></td>
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<tr>
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