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Overview

Course Description

This two-day course is designed for appraisal professionals who want to use Microsoft® Excel to apply statistical methods in solving valuation problems. The course employs Excel’s data analysis add-in and charting capabilities to assist in developing descriptive statistics and in using simple linear regression analysis to estimate linear relationships between two variables. Topics include descriptive statistics, scatter plots, an introduction to simple linear regression, assumptions underlying application of linear regression modeling, nonlinear curve-fitting, prediction and forecasting, data sufficiency, and separation of pooled data by submarket. Participants will be engaged in hands-on learning, discovering and applying basic statistical methods to data sets that illustrate each session’s objectives in a valuation context. This course will help you gain a solid understanding of simple linear regression analysis and be prepared for more advanced multiple linear regression study.

Upon completion of the course, participants should be able to

- Understand and validate the assumptions underlying linear regression analysis.
- Develop credible estimates of outcome variable values and associated confidence intervals.
- Interpret Excel’s linear regression outputs.
- Transform nonlinear relationships into linear equivalents for analysis.
- Develop forecasts from time-series data.

This course is one of a series of courses that are part of the Appraisal Institute’s Analytics for Valuation Professional Development Program. For more information about the program, see Professional Development Programs on the Appraisal Institute Web site at www.appraisalinstitute.org.

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, each part begins with a **Preview** page, which includes learning objectives to consider as you move through the content and learning tips that will assist you in understanding the information presented.
Learning Objectives. Each learning objective covers information you need to fully understand the concepts in the course. Look them over before each 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 perform what is stated? If not, this is the time to ask your instructor for help or review the concepts that you do not understand.

Discussion Questions. Discussion questions provide you with additional ideas to consider as you absorb what you are learning.

Examples. A number of examples are scattered throughout the handbook to provide everyday illustrations of what you are learning.

In-Class Exercises. These exercises provide you with additional hands-on practice as you absorb what you are learning.

Review Quizzes. Quizzes are included at the end of Parts 3, 6, and 11. The multiple-choice questions are similar to the questions you might find on the exam. Other questions use fill-in-the-blank answers to review terms, concepts, and techniques that might be tested on the exam.

Classroom Guidelines

To make the course a positive experience for everyone attending, please follow these guidelines when class is in session.

1. 100% attendance is required. No exceptions.

2. Limit use of laptops to classroom projects.

3. Communicate with business associates during break time instead of class time.

4. Put away reading materials such as newspapers and books that are not used in class.

5. Silence cell phones and other communication devices.

6. Use recording devices only if prior permission has been granted.

7. Refrain from ongoing conversations with those seated near you and other distracting behavior.
General Information

- **Calculators.** A calculator is required. **Note.** Cellular phones, tablets, iPads, and other devices that connect to the Internet are **NOT** permitted during the exam.

- **Laptop computers.** A laptop computer is required.

- **Spreadsheet program.** Excel 2010 is required. All participants must download the Excel files used for in-class exercises and problems. These are on a secure link connected to the registration process. These files should be on your hard drive in an easy-to-locate folder.

- **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 program sponsor. The lunch break is one hour. A meal is not provided unless specified in the sponsor’s advertising or in your course confirmation materials.

- **Attendance sheets** will be distributed during class to verify your attendance during the morning and afternoon sessions. Attendance for the entire course is required. **Certificates of completion** will be e-mailed after completion of the program.

Recommended Text

The following text is **strongly** recommended:

- Marvin L. Wolverton, PhD, MAI, *An Introduction to Statistics for Appraisers* (Chicago: Appraisal Institute, 2009)

Prerequisites

Recommended

- *Real Estate Finance, Statistics, and Valuation Modeling*

- *Using Spreadsheet Programs in Real Estate Appraisals—The Basics* or similar course/seminar

Participants must have basic knowledge of spreadsheets, particularly Excel.

Exam

- 25 multiple-choice questions