Course Schedule

PREREQUISITE (Pre-Class)

Advanced Education Diagnostic Test
Excel Exercise

SECTION 1 (Completed before face-to-face sections begin) (2 hours)

Part 1. Online Session: Math Review and Math Preparation for Course
Introduction Reading and Practice Problem Assignment
Part 2. Online Session: Introduction to the Analysis ToolPak and Excel Data Analysis Demonstration
Introduction Activating the Analysis ToolPak in Excel 2010— 2.1 Exercise; 2.2 Exercise Running a Regression in Excel— 2.3 Exercise; 2.4 Exercise; 2.5 Exercise

SECTION 2

Sign-in Orientation (Classroom Rules and Procedures)
Part 3. Introduction: Why Should Real Estate Appraisers Care about Statistics?
Course Introduction Multiple Regression Model—3.1 Exercise Developing an Opinion of Value—3.2 Exercise How Could the Information We Developed in These Exercises Augment the Valuation Process? How and Why Might Clients Value Statistical Analyses by Appraisers?—3.3 Exercise Why Should Real Estate Appraisers Care about Statistics? MORNING BREAK

SECTION 2, cont.

Part 4. Basic Measures: Central Tendency, Dispersion, and Symmetry

Central Tendency
Three Basic Measures of Central Tendency
(3 Kinds of Averages)—4.1 Exercise; 4.2 Exercise; 4.3 Exercise; 4.4 Exercise; 4.5 Exercise
MORNING BREAK
Simple Mean v. Weighted Means—4.6 Exercise
Samples and Populations
The Standard Deviation—4.7 Exercise; 4.8 Exercise
The Coefficient of Variation *(COV)*—4.9 Exercise
Range and Interquartile Range—4.10 Exercise; 4.11 Exercise
Box and Whisker Plots—4.1 Example; 4.12 Exercise
Analyzing Shape—4.13 Exercise
LUNCH

SECTION 3

Part 5. Data Distributions

Probability—5.1 Example, 5.2 Example
Conditional Probability—5.1 Exercise
Subjective Probability—5.2 Exercise
Probability Density Functions
The Uniform Probability Density Function—5.3 Example
The Normal Probability Density Function—5.3 Exercise
Assessing Normality—5.4 Exercise; 5.5 Exercise
The Central Limit Theorem—5.6 Exercise
Nonparametric Statistics
AFTERNOON BREAK

SECTION 3 , cont.

Part 6. Research Design

The Statistical Research Design Process—6.1 Exercise
Construct a Research Hypothesis and Related Pair of Statistical Hypotheses—6.2 Exercise
Research Validity—6.3 Exercise
Reliability
Credibility—6.4 Exercise
AFTERNOON BREAK
Sampling Error—6.1 Example
Probability (Scientific) and Nonprobability Samples—6.5 Exercise
Probability Sampling Methods—6.2 Example
Controlling Sampling Error
Begin Practice Test Sections 2 and 3

SECTION 4

Part 7. Charting Basics: Trendlines and Charts

Review Section 3 (Practice Test Sections 2 and 3)
Ordered Arrays, Frequency Distributions, and Charts—7.1 Example
MORNING BREAK
Converting a Frequency Distribution Table into a Percentage Distribution Table and Creating a Percentage Histogram
Using Polygons to Compare Multiple Percentage Distributions—7.2 Example
Summary Tables, Contingent Summary Tables, Bar Charts, and Pie Charts—7.1 Exercise
MORNING BREAK
Charting Time Series Data—7.2 Exercise; 7.3 Example; 7.3 Exercise
Using Scatter Plots to Illustrate Correlation and to Plot a Trendline—7.4 Exercise
Charting Ideals and Ethical Issues in Charting—7.5 Exercise
LUNCH

SECTION 5

Part 8. Simple Linear Regression

Simple Linear Equations
How Does a Regression Model "Think"?—8.1 Exercise
Assumptions Underlying Simple Linear Regression and How They Relate to Inference—8.2 Exercise
Interpreting Regression Model *t* Statistics—8.3 Exercise
AFTERNOON BREAK
Sample Size Issues Related to Simple Linear Regression
Predicting with a Simple Linear Regression Model and Development of Confidence Intervals—8.1 Example; 8.2 Example
AFTERNOON BREAK
Regression Error Patterns Indicating Violations of the Assumptions Underlying a Linear Regression Model—8.4 Exercise
Practice Test, Review, Recap

SECTION 6

Part 9. Trends and Forecasts

Time-Series Data
Approaches to Modeling Time-Series Data
Simple Linear Time-Series Model—9.1 Example; 9.1 Exercise
Curvilinear Time Series—9.2 Exercise; 9.2 Example; 9.3 Exercise
MORNING BREAK
Distance (Proximity) Effects—9.4 Exercise; 9.5 Exercise
MORNING BREAK
Causal Time Series—9.3 Example
LUNCH

SECTION 7

Part 10. Multiple Linear Regression: Part I

Multiple Linear Equations
Underlying Assumptions and Tests of Significance—10.1 Exercise; 10.1 Example: Modeling a Curvilinear Response Surface
Curves in Multiple Linear Regression—10.1 Example
AFTERNOON BREAK
Some Model Building Issues—10.2 Example; 10.2 Exercise; 10.3 Exercise
Overfitting and Omitted Variables—10.3 Example
AFTERNOON BREAK
Practice Test
Review Test, Recap

SECTION 8

Part 11. Multiple Linear Regression: Part II

Indicator Variables—11.1 Exercise
MORNING BREAK
Indicator Variables—11.1 Exercise, cont.
Interaction Variables—11.1 Example; 11.2 Exercise
MORNING BREAK
Using Dummy Variables to Account for Market Conditions in Panel Data—11.3 Exercise
LUNCH

SECTION 9

Part 12. Multiple Linear Regression Case Study	
	Practice Test
	Case Introduction; Assignment; Suggested Ways to Deal with Data Limitations of Excel
	AFTERNOON BREAK
	Step-by-Step Instructions; Group Work on Model Building
	Presentation Development by Groups
	Group Presentations
	Wrap-up by Instructor
	AFTERNOON BREAK
Part 13. Exam Content Review	
	Basic Information for the Exam
	Guidance on Studying for the Final Exam
	Guidance on Taking the Final Exam
	Test-Taking Strategies
	Content Review: Course Objectives and Terms and Concepts to Remember
	Review Quiz
	Self-Study

Exam

Exam	
	Exam