

Course Schedule

PREREQUISITE (Pre-Class)

Advanced Education Diagnostic Test

Excel 2007 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. (Day 1 Morning)

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. (Day 1 Morning, 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. (Day 1 Afternoon)

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. (Day 1 Afternoon, 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. (Day 2 Morning)

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. (Day 2 Afternoon)

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. (Day 3 Morning)

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. (Day 3 Afternoon)

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. (Day 4 Morning)

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. (Day 4 Afternoon)

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

(Day 5 Morning)

Exam

Exam