

MANAGEMENT 595: DATA ANALYSIS

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| <u>Professor:</u> | Richard R. Batsell |
| <u>Office:</u> | Herring Hall, Room 321 |
| <u>Office Hours:</u> | Monday, Wednesday 9:40 – 10:30, 3:50 – 4:30, and by appointment |
| <u>Classroom:</u> | Herring Hall, Room 117 |
| <u>Meeting Time:</u> | Monday, Wednesday — 8:00 – 9:30 Monday, Wednesday — 12:30 – 2:00 Monday, Wednesday — 2:15 – 3:45 |

Course Objectives:

I have designed this course with two major objectives in mind. First, I want you to thoroughly understand, and be able to competently apply, those statistical methods typically used in the analysis of business data. Second, I want to affect how you think about problems. If data can help you resolve a business problem, this course should enable you to:

- (1) structure the problem in a way that facilitates its analysis;
- (2) specify the data that needs to be collected;
- (3) decide on the statistical technique(s) most appropriate for analyzing the data;
- (4) apply the technique correctly; and,
- (5) insightfully interpret the results in terms of their implications for the original problem.

Course Grade:

Your final grade for the course will be determined by your performance on the following requirements:

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| Six mini-assignments, totaling 100 points | 100 |
| One Exam | 100 |
| Paper | <u>100</u> |
| | 300 points |

The exam will be open book, open notes, and scheduled during exam time at the end of the second mini-semester. Reading will be primarily in the class SPSS manual and in my handouts. The SPSS Base 10.0 is for backup if you find it helpful.

| <u>Class</u> | <u>Day/Date</u> | |
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| 1 | M, 10/1 | <p>Topics Covered: Introduction, Syllabus, Data Files, Application Example</p> <p>Before next class: 1) Pick a data base or begin creating a new one; 2) Read pages 1-12 in class SPSS manual; 3) Read pages 1-14 in SPSS Base 10.0.</p> |
| 2 | W, 10/3 | <p>Topics Covered: Levels of Measurement, Data Base Discussion</p> <p>Before next class: 1) Review notes on levels of measurement.</p> |
| 3 | M, 10/8 | <p>Topics Covered: Sampling, Probability Distributions</p> <p>Before next class: 1) Review notes on sampling and probability distributions; 2) Run one-page partial print-out of your data base for turning in Thursday.</p> |
| 4 | W, 10/10 | <p>Topics Covered: Descriptive Statistics</p> <p>Assignment Due: Partial Print-out of Data Set (5 points)</p> <p>Before next class: 1) Review notes on descriptive statistics; 2) Read pages 13-29 in class SPSS manual; 3) Read pages 15-36 in SPSS Base 10.0; 4) Begin running frequencies, histograms, and descriptive statistics on variables.</p> |
| 5 | M, 10/15 | <p>Topics Covered: Chi-Square Introduction</p> <p>Before next class: 1) Review notes and hand-out on chi-square; 2) Read pages 30-41 in class SPSS manual; 3) Read pages 63-87 in SPSS Base 10.0; 4) Start experimenting with crosstab runs; 5) Prepare descriptive statistics assignment for turning in Thursday.</p> |
| 6 | W, 10/17 | <p>Topics Covered: Chi-Square Implementation and Interpretation</p> <p>Assignment Due: Descriptive Statistics (5 points)</p> <p>Before next class: 1) Have one crosstab test available for random calling presentation in class.</p> |
| 7 | M, 10/22 | <p>Topics Covered: Linear Combinations/Linear Models/F test</p> <p>Before next class: 1) Review linear models notes and handout; 2) Read pages 42-51 in class SPSS manual; 3) Prepare Chi-Square assignment for turning in Thursday.</p> |

- 8 W, 10/24 Topics Covered: One independent variable test with binary predictors/Chi-Square Presentations
Assignment Due: Chi-Square Test (20 points)
Before next class: 1) Review notes on one-variable test; 2) Experiment with running one-variable tests.
- 9 M, 11/12 Topics Covered: Goodness of Fit Measures/Linear Independence/Chi-Square Presentations
Before next class: 1) Review notes on goodness-of-fit and linear independence; 2) Read pages 177-188 in SPSS Base 10.0; 3) Prepare one-variable test for turning in Tuesday.
- 10 W, 11/14 Topics Covered: Test for linearity/One-variable presentations
Assignment Due: One-variable test (20 points)
Before next class: 1) Review notes on linearity test; 2) Read pages 71-76 in class SPSS manual; 3) Run linearity test for turning in on Thursday.
- 11 M, 11/19 Topics Covered: Tests with two independent variables and binary predictor vectors/ Linearity test presentations
Assignment Due: Linearity test (20 points)
Before next class: 1) Review notes on two-variable test; 2) Read pages 52-70 in class SPSS manual; 3) Run two-variable test for turning in on Thursday.
- 12 M, 11/26 Topics Covered: Multiple Regression/Two-variable presentations/Hold-out predictive tests
Assignment Due: Two-variable test (30 points)
Before next class: 1) Review notes on multiple regression and predictive test; 2) Read pages 77-106 in class SPSS manual; 3) Run regressions for random calling on Tuesday.
- 13 W, 11/28 Topics Covered: Multiple regression transformations/ Multiple regression presentation
Before next class: 1) Review notes; 2) Read pages 189-230 in SPSS Base 10.0.
- 14 M, 12/3 Topics Covered: Application examples/Presentations

15 W, 12/5 Topics Covered: Special considerations for Time Series Data/Presentations

16 M, 12/10 Topics Covered: Time series/Presentations/Applications

The paper is due on Friday, 12/7, no later than 5:00 p.m. in the offices of the second floor of Herring Hall. You are welcome to turn it in early. Have a complete first draft printed out by Wednesday, 12/5.

The final exam will be given on Thursday, 12/13 from 9:00 am to 12:00 noon.

Any student with a disability requiring accommodations in this course is encouraged to contact me after class or during office hours. Additionally, students can also contact Disabled Student Services in the Ley Student Center.