

Statistical Decision Analysis: Course Details

Readings and exercises

The complete set of course materials is online, organized into session-by-session segments. The readings for each session are designed to be read *after* the lecture.

Course website: <http://www.kellogg.northwestern.edu/faculty/weber/emp>

Our main course notes consist primarily of PowerPoint presentations. A full course packet will be distributed before our first session, so you can take notes on the slides as we cover them in class.

Each dataset we'll analyze is on the first tab of an Excel workbook, followed by a tab containing a description of the dataset and a number of questions. Subsequent tabs contain answers at varying levels of detail. This is a hands-on course. It's essential that you work through the datasets and related questions until you become comfortable with the material. If you hit any problem where you can't quite make sense of the answer, or reconcile an answer with your own approach, please reach out to me immediately. These EMP courses fly by quickly. Don't let a single problem eat up too much of your time, but certainly don't ignore a problem that challenges you.

There's a substantial amount of optional supplementary material on the website. Don't let it distract you: I'll make clear what material absolutely requires your attention. Use the rest as you choose, if it helps to have a bit more to read or work on.

Grading

There is no graded homework: I care about what you know at the end of the course, and not about how quickly you learn the material. That said, please don't let yourself fall behind. If any problems (personal or professional) arise, reach out to me and/or the staff as soon as possible.

The evaluative component of the course consists of a two-hour online examination to be taken when convenient on January 7 or 8. A bit more than a week before the exam, I'll email you a dataset and suggestive commentary.

[Honor code: You may discuss and analyze the dataset within your study group, but there should be no cross-study-group (or, of course, outside) communication regarding it.]

When you choose to take the exam, have the dataset on your computer: All of the quantitative problems on the exam will focus on an analysis of the sent-out dataset using the course regression analysis software (KStat). The exam will be open-book, open-notes, and open-anything-previously-prepared-on-paper-or-electronically-by-you-and-your-study-group.

The course exercises are all based on previous examinations, so you'll have a good idea of what to expect by the time exam day rolls around. With luck and a little preparation, you'll probably find that you've anticipated and worked out answers to many of the exam questions in advance.

Statistical Decision Analysis: Course Schedule

Before October 12:

Preliminary readings, distributed by email

October 12 (Thursday):

Regression analysis (the “motorpool” case); afternoon, 3 hours

Classroom practice (discounts on automobile purchases); late afternoon, 1.5 hours

Group practice; after dinner

October 13 (Friday):

Hypothesis testing (accounts receivable); early morning, 1.5 hours

Interaction effects (motorpool redux); late morning, 1.5 hours

Group practice; late afternoon (casino revenues): Cancelled.

Due to Irma-related rescheduling, we’ve lost this group practice session. I’m staying until Sunday, and will be happy to meet with any groups over the weekend. As well, we have two months before our next sessions, and I hope that most groups (or individuals) will have plenty of time to work on the three “before December 7” datasets and contact me with any questions.

Before December 7:

Individual and group practice (casino revenues, maîtres d’ (Hans and Franz), Evanston Widgets)

December 7 (Thursday):

Correlation (warnings, customer satisfaction); early afternoon, 1 hour

Specification bias, variable discovery (motorpool redux 2); mid-afternoon 1 hour

Nonlinear models (per-unit manufacturing costs); late afternoon, 1.5 hours

Polling, NBER examples; end of afternoon, 1 hour

Group practice (real estate prices and clubhouses); after dinner

December 8 (Friday):

Qualitative variables and ANOVA (soccer attendance); early morning, 1.5 hours

Outlier analysis (municipal salaries, McDonald’s story); late morning, 1.5 hours

December 10-January 6:

Review (webpage design (sample exam), everything else)

December 30 (Saturday morning):

Final exam dataset sent out for individual and study-group consideration

January 7-8 (Sunday-Monday):

Individual online exam (2 hours). During these two days there should be no contact between classmates.