***Statistics 608***

***Waiver Preparation for Statistics 621***

Instructor

Robert Stine 444 Huntsman Hall stine@wharton.upenn.edu

Overview

These five lectures guide your preparation for taking the waiver exam for Statistics 621, the required MBA core course. Passing this waiver exam satisfies the Statistics requirement for the MBA core; if you pass the exam, you do not need to take Statistics 621. (But you could take Statistics 622 if you discover that you like Statistics!) In order to do well on the waiver exam, you should have *recently* taken one or more courses using regression analysis. Applied, “hands-on” courses that analyze data and stress interpretation and critical evaluation of regression are most useful. A technical background (*e.g.*, engineering) may be useful so that the necessary arithmetic doesn’t get in the way.

These lectures rapidly cover Statistics 621. In fact, we cover the course pack from last year’s edition of Statistics 621. You should already be familiar with the topics of this course. You will not likely have time to learn them before the exam unless you have seen them in previous courses. The lectures review and enhance your appreciation of these methods, but the pace is often too swift to learn them from scratch. Some key topics that you should have seen include prediction intervals, regression diagnostics (leverage, influence, residuals), collinearity, dummy variables, interaction, and autocorrelation. You will probably do well if one or two of these topics are new; if too many are unfamiliar, however, this course may move too quickly. In that case, you would be well served by taking Statistics 621 in the fall semester. All of these ideas are discussed in the required casebook and supplemental text. Topics covered during the pre-term course Stat 603 (*e.g.*, basic probability, correlation, p-values, confidence intervals, tests, etc) are assumed known.

Each lecture reviews several concepts and suggests questions from past waiver exams. The lectures include key examples from the course notes and other illustrations of the use of these methods in practice.

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| Lecture | Course-pack Modules | Topics |
| 1 | 0 – 2 | Bivariate (“simple”) regression, transformations, diagnostics |
| 2 | 2 – 4 | Inference in simple regression, intro to multiple regression |
| 3 | 4 | Inference, collinearity, and diagnostics in multiple regression |
| 4 | 5 | Categorical variables in multiple regression |
| 5 | 6 – 7 | Building models, methods for time series, summary. |

**Software**

I will use the *JMP* software package to produce the examples of data analysis that are used to illustrate the applications of statistics covered in the class presentations. It is not necessary for you to learn how to use this software; you will, however, need to interpret output prepared from *JMP*. The output in the waiver exam will be from *JMP* as well as all examples in prior exams and in class. Also, you may find it useful in your preparations to study by working through (rather than passively reading) examples from the casebook.

Materials

Required:  
Course-pack. Available on-line from Web Café and printed via Study.net. Be sure to obtain the course pack for Stat 608. The labeling in the course pack will be for last year’s version of Stat 621.

Supplemental: (on reserve in Lippincott Library)  
Keller, *Statistics for Management and Economics*, 8th edition, Cengage.  
Stine & Foster, *Statistics for Business*, 1st edition, Addison-Wesley.

Date and Location of Waiver Exam

The Stat 621 waiver exam is scheduled for Thursday, August 18 from 7:00 p.m. to 9:00 pm. The exam is **closed-book**, but you are allowed *one page of hand-written notes* (**no photocopies**).

WebCafe

Class notes and other materials (including this syllabus) are available in Web Café. You must register for this course in order to gain access.

Office Hours, E-mail

If you want to ask me a question outside class, I recommend sending an e-mail. I try to answer these each evening. I will also be teaching Stat 603 during the pre-term and will not be available for lengthy, one-on-one discussion. I will announce additional office hours as the pre-term continues.

Teaching Assistants are available to answer specific questions about the material covered in Stat 608. Their office hours are posted in Web Café. Additional hours may be added as the exam approaches. Please be advised that you cannot expect TAs to offer tutoring during office hours. They are there to answer specific questions about the material, and for example should not be expected to review an entire old exam.