## Department of Statistics

## The Wharton School

##### University of Pennsylvania

### STAT 603 August 2010

#### Basic Business Statistics

Syllabus

***Instructors:***

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**Source material**

*Required*

* Class Notes. A complete, half-size copy of these notes can be purchased through Study.net beginning Monday, August 2. These can also be downloaded directly from the 603 Webcafe e-room.
* SAS Institute, JMP 8, downloadable from [upenn.onthehub.com](file:///C:\Documents%20and%20Settings\edgeorge\My%20Documents\Teaching%20Wharton%20MBA%20603-621\603-621%20F09\www.e-academy.com). (Also required for Stat 621).

*Recommended*

* Stine and Foster, *Statistics for Business*, Addison Wesley. (Also recommended for Stat 621).

*Optional* (on reserve at Lippincott Library)

* Sall, Creighton, Lehman, *JMP Start Statistics*, 4th Edition, SAS Publishing.
* Freedman, Pisani and Purves, *Statistics*, 4th edition, Norton.
* Keller, *Statistics for Management and Economics*, 8th edition, South-Western Cengage Learning.

The fundamental material for the class is contained in the Class Notes which will be discussed and elaborated in the class lectures. A good deal (but not all) of the Class Notes is also elaborated in the Stine and Foster (SF) textbook. Indications for the relevant readings in SF are included throughout the Class Notes. For those who would like further background materials, we recommend Sall, Creighton and Lehman (SHL), Freedman, Pisani and Purves (FPP) and Keller (K). SHL is a basically an example rich guide to statistical analysis with JMP. FPP is a highly verbal and conceptual book - an excellent introduction both for “poets” who are unfamiliar with technical readings and for “quant jocks” who would like a better sense of the reasoning process of statistics. K is the traditional “reference manual” and explains details of statistical procedures that are not covered in class. FS, SHL, FPP and K will also be the recommended optional supplements for 621, the fall core statistics course.

JMP is the computer package we’ll use to for statistical calculations and graphics. It will be employed considerably both in 603 and in 621. In particular, an essential component of 621 will entail a group project that will require substantial computer work. Although JMP is merely a tool and not the central point of the course, it is sufficiently useful that you need it.

Finally, it should be emphasized that the ideas in this course will *not* be reviewed in 621; we will not have time to do that.

**Class schedule (Statistics 603)**

The Class Notes are organized into 9 modules that will be covered in order.

Module 0 – Preliminaries

Module 1 – Data and Variation

Module 2 – Probability Models

Module 3 – Variance and the Volatility of Investments

Module 4 – Association and Dependence

Module 5 – Covariance and Portfolios

Module 6 – Sampling and Sampling Distributions

Module 7 – Standard Errors and Confidence Intervals

Module 8 – Statistical Hypothesis Testing

There will also be three assignments. Although these assignments will not be collected, they are essential for the learning process and you should treat them as a requirement. Solutions will be posted for you to check your work.

To provide feedback, we will also have two short in-class quizzes to test your progress in the course. The schedule for the assignments and quizzes is:

*Class 4:* Complete Assignment 1 and Quiz 1.

*Class 7:* Complete Assignment 2 and Quiz 2.

*After Class 9 (and before Stat 621):* Complete Assignment 3. (Quiz 0 on Sept 15 in Stat 621 will be based on the material in Modules 6-8. This material is covered by Assignment 3).

**Class Preparation**

As soon as possible, you should obtain and install JMP 8. Before each class, you should review the Notes from the previous class and skim the upcoming Notes. This is a course that builds on itself and it is crucial to not fall behind. You should also read the relevant sections of SF as annotated throughout the Notes.