

STAT 112 – Spring 2015
SYLLABUS AND OTHER INFORMATION

Lecturer: Dr Warren J Ewens

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NOTE: It is not part of the TAs job description to hold office hours, help students, etc. For help with problems or for any other reason contact Dr. Ewens at the email address above.

Lectures are at 9 am - 10:20 am, Tuesdays and Thursdays, starting January 15, in room F55 of Huntsman Hall (the “Wharton building”).

Contact information, Dr Ewens. Office is Room 324 in Leidy Labs (the “Zoology” building), at the corner of 38th Street and Hamilton Walk. Office hours are in effect “open”, and unless otherwise agreed, are held in room 324 Leidy Labs office. Make an appointment via the email address above.

Homeworks Homeworks will be handed out in class weekly, and will be due back in class a week later.

Recitation class. There are no recitation classes for this course. Part of each Thursday lecture will be devoted to a discussion of homework questions and to questions about the course material.

Exams There will be one mid-term exam, to be given in class hours soon after the mid-term break. (More details later.) The final exam will be Monday May 4, 12 noon - 2 pm. More details as to the location where this final exam will be held will be given later. The timing of the final exam is set by the university and cannot be changed.

Assessment The assessment in this course is by homeworks (10%), the mid-term exam (30%) and the final exam (60%).

Textbook There is no required textbook for this course. However the book “EZ Statistics” by Downing and Clark (Barron’s) is cheap and covers most of the material to be given in class.

JMP The course will in part be given in association with use of the statistical package JMP 10. You should either install this package on your computer or (much cheaper) learn to use

the Wharton computers that have it installed. It might help you to buy a copy of the fifth edition of the JMP manual “JMP Start Statistics”, SAS.

Web resource The web resource in this course is “Canvas”. For SAS students, log on to

<https://apps.wharton.upenn.edu/accounts/>

You have to select the class accounts list to create a new class account. If you have any questions about using web resources please email Keyan Halperin (keyan@sas.upenn.edu) .

SYLLABUS

The course will focus on procedures of statistical inference, and mainly on hypothesis testing. It is also a “consumer oriented” course: students may suggest that the course discusses topics that are of interest to them. Also, topics will almost certainly not be presented in the order given below. In more detail:

1. Hypothesis testing: parametric tests.

- 1.1 Fisher’s exact test.
- 1.2 The concept of the power of a test.
- 1.3 One-sample t tests: review.
- 1.4 Two-sample t tests: review.
- 1.5 One-way analysis of variance (ANOVA).
- 1.6 Two-way analysis of variance (ANOVA).
- 1.7 Hypothesis testing in multiple regression
- 1.8 Hypothesis testing in correlation
- 1.9 Suggested topics.

2. Hypothesis testing: non-parametric tests.

- 2.1 Non-parametric alternatives to the tests in 1.3 -1.8.
- 2.2 The analysis of categorical data.

3. Theory relating to the estimation of parameters.

These topics will not necessarily be covered in the same order as given above.