Statistics 101

Spring 2000

Lectures MWF 2 to 3 in 75 Evans

Labs F 12 to 1 in 340 Evans

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Office Hours Mon 3–4, Wed 11–12

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Text Required: *Probability* by J. Pitman.
Suggested: *The Pleasures of Probability* by R. Isaac.

The course will generally follow the Pitman text. In particular, the first three chapters will be covered in the first 6 to 7 weeks. After that, the coverage will become a touch more spotty, and at the end, a few "application" topics will be introduced, including some reading from the Isaac book. (It is available on reserve in Moffitt Library. You do not need to buy it; however, it does offer a different and chattier approach to some of the same concepts, so you may like to have a look.)

Homework This will be assigned in labs on Friday. You should turn in your homework in lab on the following Friday. The lowest two homework scores will not be counted in your grade. There will be no acceptance of late homeworks, except in case of a prolonged serious illness or family crisis.

Midterms There will be one midterm. It is tentatively scheduled for Monday, March 6.

Final exam The final will be 5–8 pm, Friday, May 19.

Grading Your grade in the course will be based on a score, of which 20% will be derived from your homework, 30% will be your score on the midterm exam, and 50% the final exam.

Prerequisite Two years of calculus and linear algebra. Calculus will be used heavily in the second half of the course. If you are not reasonably comfortable with derivatives, integrals, and Riemann sums you will have trouble. Problem set 0 is intended to assess your background in this area.

Problem Set 0: Due Friday, January 21

1) Compute a) $\int_{-1}^{1} xe^{-x}dx$;
b) $\int_{-1}^{1} xe^{-x^2}dx$.

2) a) Find the minimum of $e^x - 1 - x$ over all real numbers x;
b) Show that $e^x \geq 1 + x$ for all real numbers x.

3) a) Compute $1 + 2 + \cdots + 2000$;
b) Show that

$$\frac{1999^{n+1}}{n+1} \leq 1^n + 2^n + 3^n + \cdots + 2000^n \leq \frac{2000^{n+1}}{n+1}$$

for all positive n.