

Welcome to Statistics 111

Professor Shane Jensen

The goal of this course is to develop basic tools for data analysis, probability and statistical methods. Key topics covered in the course include exploratory data analysis, regression, probability, estimation, and hypothesis testing

Sept. 3, 2008

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Syllabus notes: Website

- All handouts will be available on the website:
<http://stat.wharton.upenn.edu/~stjensen/stat111.html>
- Website also contains contact information for myself and teaching assistants
- Link on website for getting [Wharton class account](#) if you are not a Wharton student
 - Helpful if you want to use Wharton computer labs

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Syllabus notes: Homeworks

- Homeworks will be handed out every week or two (around 8 HWs in all)
- Homeworks will be submitted during Friday recitation
- **No late homeworks will be accepted !!**
 - Late homeworks will get a score of zero, without exception
 - Your lowest homework grade is not included in final grade

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Syllabus Notes: Midterm Exam

- Midterm is held on following date:
Thursday, October 23rd (6-8pm)
- **No makeup midterm examination!**
 - A missing midterm exam counts as a zero score
 - **Do not take this course if you can not attend midterm!**

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Syllabus Notes: Friday Recitations

- Friday recitations are **mandatory**: attendance will be taken by your TA
- No excuses for missing recitation are accepted: every missed recitation will reduce your recitation score
- However, worth noting that recitation score is only 10% of overall course grade
- **No recitation this week...recitations start on Friday, September 12th**

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Syllabus Notes: Textbook

- Moore and G. McCabe: Introduction to the Practice of Statistics (IPS), 6th Edition is required textbook
- Older editions of this textbook are fine for course material, but homeworks will be out of current edition, so you will need access to current edition for homework questions
- JMP IN 7.0 is supported software for course. You will need to use software for some homework questions.
- Can buy JMP if you want, or just use JMP in the Wharton computer labs
- Recitations can be used for JMP questions

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Syllabus Notes: JMP

- JMP 7.0 is supported software for course. You will need to use statistical software for some homework questions
- Can buy JMP if you want, or just use that JMP that is installed in the Wharton computer labs
- Friday recitations will be, in part, devoted to questions and issues about using JMP

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Student Questionnaire

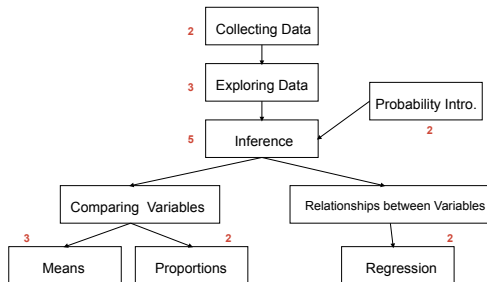
- Fill out a questionnaire and hand it in at the end of lecture
- I will try to incorporate some of the subjects that interest you into future lectures

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Course Overview



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Course Overview

- First few lectures will not involve much mathematics at all: focus on intuition and basic principles
- Then, we get to probability and inference, which most students find to be the difficult part of the course
- Second half of course is hypothesis testing and confidence intervals where all our methods come together

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Out in public: You teach statistics ?!?

- I hated that class in college!
- That was the most boring class ever!
- It didn't connect with anything else I was doing!

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Big Picture Ideas

- Statistics is all about **uncertainty**
 - Focus as much on what we **don't** know (or haven't observed) instead of what we know
- Formulating the question that we want to answer is often the most difficult part
- Unlike mathematics, no set of rules that you can just follow...you actually have to think!

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Science and Skepticism

- We always need to be cautious about conclusions based on data
 - possible sources of bias and confounding
 - how might things have gone wrong?
- A little bit of skepticism is a good thing!

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Statistical Modeling

- **Inference:** using mathematical models of uncertainty to answer questions
 - connecting probability concepts to our data
- Can not make claims without using models and making assumptions
 - Are the assumptions reasonable ?

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Next Class (Lecture 2)

- Collecting Data: Design of Experiments
- Sections 3.1-3.2 in Moore and McCabe

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