Math 1011: Introduction to Statistics

Summer 2014

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Office Hours: Tuesday & Thursday 1-2:30 or by appointment

Course Website: math.wustl.edu/~jpalmer/teaching/math1011
Course Times: 11:00pm-12:45pm, every weekday
Room: Cupples II, Room L001 (note this is a **new room**)

Description:

In this course the students will be introduced to a variety of techniques from statistics. We will discuss data collection, data organization, and inference.

Tentative Outline:

We will use textbook *Statistics* by Freedman, Pisani, and Purves (4th edition) and will cover the majority of the sections in the book. This course will be split into approximately four sections:

I. Design of Experiments, Descriptive Statistics, and Correlation/Regression
   The basic building blocks of Statistics. First we learn how to design experiments which produce reliable results, then how to summarize that data, and finally how to understand the relationship between multiple variables.
II. Probability and Chance Variability
   Probability is the theoretical foundations of statistics. It is a mathematically formal way to understand the chance of certain events occurring. In this section we will also study the law of averages and error.
III. Sampling
   Analyzing data from a sample and making valid generalizations about the entire population.
IV. Chance Models and Tests of Significance
   We learn a technique to measure the accuracy of an average. Also, we study hypothesis testing and learn to differentiate between sampling errors and statistically significant results.

In between each section we will have a quiz or exam. Check the course webpage for the calendar which will be updated throughout the summer.

Grading:

The final grading scale I will use will be influenced by the performance of the class, but it will be no worse than:

Letter Grade	Percentage in Class
A	>90.0%
B	80.0%-89.9%
C	70.0%-79.9%
D	60.0%-69.9%
F	>60.0%

What I mean is the following: To improve the distribution of letter grades I may change the intervals of raw scores (percentages) in the class which correspond to the different letter grades. In short, you are guaranteed to get at least as good of a letter grade as is indicated in the above table, but I may give you a better letter grade.

The grade breakdown is:

Homework	20%
Participation	10%
Quiz 1	10%
Quiz 2	10%
Midterm	20%
Final	30%

Notice that 10% of the grade is from participation. This is comprised of attending class (you can have only 1 unexcused absence before it affects your participation grade) and participating in the short in class assignments and activities.

Homework:

There will be approximately one homework assignment per week, due on Mondays. Since we meet every day for a long class period these homework assignments will be relatively lengthy, and it is highly encouraged to not try to complete them in a single night. This is a pattern which is very typical in higher mathematics courses, so the student would be wise to become accustomed to this now.

Exams:

There will be two "quizzes" which will be written to take about 1 hour to complete (half of one class period) and two "exams" which will be written to take an entire class period. Quiz 1 will be taken about one quarter of the way through the course and is tentatively scheduled for Wednesday, July 23rd.

Scheduling Extra Office Hours:

Please feel free to email me and set up a meeting time if you cannot attend my normal office hours. If many people cannot attend my current office hours I will change them. Students often feel uncomfortable about this but it is my job to help you! My approximate daily schedule is always up on my personal webpage math.wustl.edu/~jpalmer.