Math Camp II, Summer 2014

August 25-29 9:00 AM - 3:00 PM, Room: E53-438

Instructor:	Yiqing Xu
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Course Description: The math camp will prepare students to take Quant III and Quant IV as well as other advance classes in political methodology. The goal of the class will be to remind students of basic and intermediate mathematical concepts that are useful for Quant III and Quant IV and increase both mathematical fluency and problem solving ability. I will also try to give some programming tools that you may find useful when solving problem sets of Quant III. The prerequisites include Quant I and Quant II.

Course Structure: The short course will meet for 5 days with a lecture session lasting 3 hours in the morning, an exercise session in the afternoon. Regular problem sets are expected to be completed in class and need to be handed on the morning of next day.

Course Textbook: Gilbert Strang, *Introduction to Linear Algebra* (not required)

Course Outline:

	Topics
Day 1	Notations, Functions, Vectors and Vector Spaces
Day 2	Vectors and Vector Spaces
Day 3	Matrix Algebra, Geometrics of OLS
Day 4	Calculus: Differentiation, OLS Asymptotics
Day 5	Calculus: Integration, R Session

Course Requirements: There will be four problem sets. Each problem set will be distributed in the afternoon of each day, and will be due by 9:00AM next day. At the beginning of each lecture, I will spend half an hour going through the questions that people had most difficulty in solving among the previous day's problem set.

Other Remarks: I expect that you will take notes as you see fit. One of the more challenging parts of taking math classes is being able to write down the mathematical notation, etc., that you are less accustomed to doing while an instructor is going along. I also expect that you will ask questions, and answer questions I pose or questions of other students. Finally, and mostly importantly, let's have fun.