

Rutgers Math Camp 2013

Instructor: Vincent Greco (vincent.greco@rutgers.edu)

Location: Hickman 313

Office Hours: 5:00-6:00pm, Hickman 303

“In mathematics, you don’t understand things. You just get used to them” - John Von Neumann

Overview and Objectives

The purpose of math camp is to provide students with a set of skills that will be needed to perform well in the quantitative methods courses offered at Rutgers and elsewhere. It will cover the foundational material of algebra, probability theory, basic to intermediate calculus, and introductory statistical computing.

Required Text

- 1) Jonathan Kropko lecture compendium: <http://www.unc.edu/~kropko/mathnotes.pdf>
- 2) UCLA STATA Learning Module: http://www.ats.ucla.edu/stat/stata/sk/modules_k.htm
- 3) UCLA SPSS Learning Module: http://www.ats.ucla.edu/stat/spss/sk/modules_k.htm.

Recommended Text

Simon, Carl and Lawrence Blume. 1994. *Mathematics for Economists*, W. W. Norton & Company

Organization

Sessions will be run workshop-style where the instructor will demonstrate a concept, which will be followed by a series of in-class practice exercises. In addition, there will be short problem-sets issued daily.

Note: Please bring lunch for time in-between sessions. Alternatively, there is a dining hall near Hickman.

Schedule

1. TBD
 - Session 1 (10:30 - 12:30): Algebra Foundations, Sets, and Functions (Kropko pp 4 - 34)
 - Session 2 (2:00 - 4:00) Introduction to Probability (Kropko pp 35 - 47)
2. TBD
 - Session 1 (10:30 - 12:30): Calc I: Limits and Continuity/Full Derivatives (Kropko pp 49 - 64)
3. TBD
 - Session 1 (10:30 - 12:30): Calc II: Full Derivatives/Optimization (Kropko pp 65 - 81)
 - Session 2 (2:00 - 4:00): Calc III: Partial Derivatives/Integration (Kropko pp 122 - 127; 86 - 88; 92 - 99)
4. TBD
 - Session 1: (10:30 - 12:30) STATA overview I (UCLA Module: Fundamentals Part 1 & 2)
 - Session 2: (2:00 - 4:00) SPSS overview I (UCLA Module: Fundamentals Part 1 & 2)
5. TBD
 - Session 1: (10:30 - 12:30) Introduction to Matrix and Linear Algebra (Kropko pp 142 - 172)