Research Methods in Political Science I – Assignment 2

Due: 9am on 21 October 2015

How to submit: Email attachment

Subject of email: Research Methods 1, Assignment 2

Note: *You have to submit two separate files.*

I. Write R commands to answer the following questions. Use the fake data set we used in class (`fake-date-lec02.csv`).

File name: hw02-Last-First.R (Replace Last and First with your last and first names).

Note 1: You have to submit *not* the final products (statistics or figures) *but a series of commands written in a single R script.*

Note 2: Write not only commands but also comments.

1. Calculate the means, variances, and standard deviations of the variables *height, weight*, and *income*.

2. Draw a histogram of *weight* (choose the appropriate bin width).

3. Draw a scatter plot of *age* vs. *income* with gender distinguished by color.

II. Run a (series of) simulation(s) demonstrating how the Central Limit Theorem works with samples drawn from a discrete uniform distribution (see the course website). Write up what you find by the simulation(s).

File name: hw02-Last-First.pdf (**I will not accept MS Word files. Please use LATEXor at least save your document as PDF**.)

Note 1: You have to explain in sentences what you learn. Figures and tables without explanation will not suffice.

Note 2:   You may include figures and tables and write as much as you want.

III. (optional, for better grades)

   Run a (series of) simulation(s) similar to II with samples drawn from a binomial or gamma distribution. You can use `rbinom()` or `rgamma()` in place of `sample()`. Write up what you learn. The instructions for II also apply. Write in the same file as II.