Anthro 5485 Graphical Data Analysis

Prof: Alan Rogers   January 16, 2017

Lecture: W 12:55–3:55PM   Marriott Library 1008

http://content.anthro.utah.edu/~rogers/courses.html

Description Data analysis begins with the search for pattern. Having found pattern, we then ask whether it is real or just an artifact of sampling. Most stat courses concentrate on the second problem but ignore the search for pattern. This course reverses that usual emphasis. Students will learn to manipulate data using the R statistical package and to search for pattern using the graphical methods that come with R.

Prerequisites Any introductory stat course

Grading Lab projects (75 pts), final project (25 pts).

Contact After class and by appointment. 206a Stewart, 801–581-5529, rogers@anthro.utah.edu.

Plagiarism Any cheating or plagiarism will result in a failing grade for the course. See sections II and V of the student code (http://www.admin.utah.edu/ppmanual/8/8-10.html) for details.

Equal access provisions The University seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, then reasonable prior notice must be given to the instructor and to the Center for Disability Services, 162 Olpin Union. Call 581–5020 to make arrangements.

Date	Lecture	Reading
Jan 11 W	Lecture: Introduction to the course	
	Lecture: How to make a bad graph	E:2
18 W	Lecture: R:Basics	O:1–3;8.1–8.3
	Lab 1: Intro to R	
25 W	Lecture: Quantiles	
	Lab 2: Quantiles and QQ plots	V:2.0–2.2,2.4;M:4
Feb 01 W	Lecture: TMD plots, box plots, one-way fits	V:2.2–2.3,2.5–2.10
	Lab 3: TMD plots, box plots, one-way fits	M:4

08 W	Lecture: Scatter plots: fits and residuals	V:3.0–3.3
	Lab 4: The history of brain size	
15 W	Lecture: Robust fits and slicing	V:3.4–3.10
	Lab 5: Hormones	
22 W	Lecture: Permutation tests	permutation lab
	Lab 5 continuation: Hormones	
Mar 01 W	Lecture: The bootstrap	bootstrap lab
	Lab 6: Permutation tests	
08 W	Lecture: Trivariate data: coplots	V:4.0–4.7
	Lab 7: The bootstrap	
15 W	∗∗∗ NO CLASS	
22 W	∗∗∗ NO CLASS	
29 W	Lecture: Multiway dotplot	V:6.1
	Lab: Student projects	
Apr 05 W	Lecture: Multiway additive fits	V:6.2–6.5
	Lab: Student projects	
12 W	Student presentations	
19 W	∗∗∗ NO CLASS	

Key to readings E:*Elements of Graphing Data*; M:Murrell; O:Owen; V:*Visualizing Data*. (See readings page on course website for details.)