Computing for Scientists – Tentative Schedule

Mon Aug 30:   Introduction to the Course and Tools
Wed Sept 1:   Linux, Bash, and console editors

Mon Sept 6:   (No class, Labor Day)
Wed Sept 8:   Version Control with git

Mon Sept 13:   More git, Managing Projects with Github
Wed Sept 15:   Intro to R | Wickham Chs. 1–4 as needed | Midterm coding topic due

Mon Sept 20:   Documenting your work for reproducibility with R Markdown
Wed Sept 22:   Discussion: Best Practices in Scientific Computing | Wickham Ch. 5, assigned paper

Mon Sept 27:   More basics in R | Wickham Chs. 6, 8 as needed
Wed Sept 29:   Debugging code and Defensive Programming | Wickham Ch. 9 as needed

Mon Oct 4:   Testing Code in R | Test-Driven Development Article, Testing in R Chapter
Wed Oct 6:   Refactoring code | When to Refactor Article | Midterm coding project due Friday

Mon Oct 11:   Providing Critical Feedback (Assessment tool development)
Wed Oct 13:   Profiling and optimizing code in R | Wickham Chs. 16 & 17, Profiling with RStudio

Mon Oct 18:   Using memory efficiently | Wickham Ch. 18
Wed Oct 20:   Statistical and data analysis tools in R | Chosen topic

Mon Oct 25:   Statistical and data analysis tools in R continued | Chosen topic
Wed Oct 27:   Parallel processing | Midterm project revision due

Mon Nov 1:   Advanced shell programming.
Wed Nov 3:   Shell programming cont.

Mon Nov 8:   Interacting with clusters | Keck Cluster Intro Materials
Wed Nov 10:   Basic Principles of Data Visualization

Mon Nov 15:   ggplot2 in R | Chang Appendix A

Wed Nov 17:   Discussion: Lies, Damn Lies, and Statistics: the Ethics of Data Visualization | Assigned paper

Mon Nov 22:   (No class, Thanksgiving)
Wed Nov 24:   (No class, Thanksgiving)

Mon Nov 29:   Preparing figures for publication & presentation
Wed Dec 1:   Preparing scientific publications

Mon Dec 6:   Archiving your data
Wed Dec 8:   Discussion: Data reproducibility in scientific publications | Assigned paper

Final Project Writeup due Monday, December 13 at 4:15 pm