

# Computing for Scientists – Tentative Schedule

**Mon Aug 31:** Introduction to the Course and Tools.

**Wed Sept 2:** Linux, Bash, and console editors.

**Mon Sept 7:** (No class, Labor Day)

**Wed Sept 9:** Version Control with git.

**Mon Sept 14:** More git and basic shell programming.

**Wed Sept 16:** Advanced shell programming.

**Mon Sept 21:** Shell programming cont.

**Wed Sept 23:** *R* Refresher.

**Mon Sept 28:** Statistical and data analysis tools in *R*.

**Wed Sept 30:** Statistical and data analysis tools in *R* continued.

**Mon Oct 5:** Discussion: Best Practices in Scientific Computing. Midterm coding projects.

**Wed Oct 7:** Test-driven development in *R*.

**Mon Oct 12:** Refactoring code

**Wed Oct 14:** Profiling and optimizing code in *R*

**Mon Oct 19:** Using memory efficiently

**Wed Oct 21:** Documenting your work for reproducibility

**Mon Oct 26:** Automating workflows

**Wed Oct 28:** Interacting with clusters (Midterm Projects due)

**Mon Nov 2:** Managing large data sets

**Wed Nov 4:** MPI and parallel processing

**Mon Nov 9:** Getting started in L<sup>A</sup>T<sub>E</sub>X

**Wed Nov 11:** Preparing scientific publications

**Mon Nov 16:** Basic Principles of Data Visualization

**Wed Nov 18:** Discussion: Lies, Damn Lies, and Statistics: the Ethics of Data Visualization

**Mon Nov 23:** (No class, Thanksgiving)

**Wed Nov 25:** (No class, Thanksgiving)

**Mon Nov 30:** ggplot2 in *R*

**Wed Dec 2:** Preparing figures for publication & presentation

**Mon Dec 7:** Archiving your data

**Wed Dec 9:** Discussion: Data reproducibility in scientific publications