Stat 5014 Syllabus

Bob Settlage

2018

9:00-9:50 a.m.	Wednesday, Torgersen Hall 1040
CRN:	87756
Office:	3030 Torgersen
Email:	rsettlag@vt.edu
Office hours:	MF 9-10, Torgersen 3030 (inside 3050)
Course Website:	https://github.com/rsettlage/STAT_5014_Fall_2018

Text book

There is no required text book for this course. The following resources will be helpful: Google, your classmates, NLI (https://nli.tlos.vt.edu), SAIG short courses.

Required software (all free, install in order)

Package	Source
Git:	https://git-scm.com/
Github:	https://github.com (account)
Latex	https://miktex.org/
R:	https://cran.r-project.org/
Rstudio:	http://rstudio.com/
Python:	https://www.python.org/
ARC account:	arc.vt.edu
Command line:	native Terminal (Mac)
	Mobaxterm (or equivalent Putty, etc; Windows 10 use the Ubuntu plugin)
	https://secure.hosting.vt.edu/www.arc.vt.edu/accessing-unix-system/#sshClients

Grading:

Grading based on weekly homework.

Grading details:

Homework will be assigned each week and is accessible via the course git repository. Feel free to discuss assignments with other students, but the work handed in must be exclusively your own unless otherwise noted. Each assignment must be neatly typed in Rmarkdown in formal, correct English. Note that after the first assignement, ALL assignments will be accessible and searchable on the web. As such, think of these assignments as your first public work.

Course details

This course endeavors to build competence in R and Python programming. We will use Swirl to reinforce the programming concepts. As we explore programming methods, we will use Rmarkdown for document typesetting. In the process of working through this course, you will gain familiarity with version control and LaTeXvia markdown. The course will include, but is not restricted to, the following programming topics:

- R, Rmarkdown, Rprojects, Rnotebooks

- Git as a code repository

- Functions, conditional statements and loops in R

- Base and grammer of graphics (ggplot2) in R

- Apply family of functions in R

- Matrix and vector math in R

- Python

- Parallel computing

- JMP and SAS

In the process of learning the above programming methods and platforms, we may also explore the following statistical methods:

- Exploratory Data Analysis tools

- Linear regression

- ANOVA

- Monte Carlo procedures

- Power

Honor System

Students enrolled in this course are responsible for abiding by the Honor Code. A student who has doubts about how the Honor Code applies to any assignment is responsible for obtaining specific guidance from the course instructor before submitting the assignment for evaluation. Ignorance of the rules does not exclude any member of the University community from the requirements and expectations of the Honor Code.

The Virginia Tech honor pledge for assignments is as follows: ***"I have neither given nor received unauthorized assistance on this assignment."***