NE 24 - Putting the Science in Computational Science
M 3:00 - 4:00 pm in 237 Cory

Instructor: Rachel Slaybaugh, 4173 Etcheverry Hall,
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Office Hours: 2:30 - 3:30 PM F and by appointment

Course Description: Is something science if it's not reproducible? How reproducible is the science involving data and computation? Work in these areas is frequently fraught with version, access, and reproducibility problems–resulting in erroneous results and wasting time and energy.

This course will equip you to begin a career in which you can tackle computational science projects effectively. You will learn

- how to navigate the command line;
- how to track and share work over the web; and
- how to grow a program in a modular, testable, documented, reusable way.

These skills will save you time and help you work more effectively in many future classes and in your career.

Resources:

- Course GitHub page: https://github.com/rachelslaybaugh/NE24
- Software Carpentry's lessons: http://software-carpentry.org/lessons.html
- bCourses site: https://bcourses.berkeley.edu/courses/1457497
- Choose a Python Ebook that fits your needs: http://www.leettips.org/2013/02/top-10-free-python-pdf-ebooks-download.html

the Hacker Within:

- Tuesdays, 4-5:30 pm, 190 Doe Library (BIDS Space)
- Will teach skills useful for this course
- Website: http://thehackerwithin.github.io/berkeley/
- GitHub: https://github.com/thehackerwithin/berkeley

Grading:

- Homework 50%
- Class participation 20%
- Final Project 30%
- Late submissions: -20% for each day it is late

Useful Campus Information:

- Mental health resources: http://www.uhs.berkeley.edu/students/counseling/cps.shtml
- Sexual assault support on campus: http://survivorsupport.berkeley.edu/

Academic Honesty: Berkeley's honor code is

> As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others.

The University provides some basic guidance about academic integrity: http://sa.berkeley.edu/conduct/integrity. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to me.

My policy is that you may work together on homework, **but you must specifically site with whom you worked and what you did together**.

Extra Help: Do not hesitate to come to my office during office hours or by appointment to discuss a homework problem or any aspect of the course.

Attendance: Students are expected to attend classes regularly. A student who incurs an excessive number of absences may be withdrawn from this class at my discretion.

Other Policies: This course abides by the university policies for

- accommodation of religious creed http://registrar.berkeley.edu/DisplayMedia.aspx?ID=Religious%20Creed%20Policy.pdf, and
- conflicts between extracurricular activities and academic requirements http://academic-senate.berkeley.edu/sites/default/files/committees/cep/guidelines_acadschedconflicts_final_2014.pdf.
- In case of illness please do not come to class if you have a fever or something highly contagious. Please do if there is any chance you will pay attention and not get other sick: http://academic-senate.berkeley.edu/committees/coci/toolbox#16.

Schedule: *Note that this is subject to change*
Please check the github page for up-to-date data.

Lecture	Date	Topic
1	23-Jan	introduction
2	30-Jan	shell
3	6-Feb	Git local
4	13-Feb	Git remote
-	20-Feb	*President's Day*
5	27-Feb	iPython
6	6-Mar	projects
7	12-Mar	unit testing
-	20-Mar	in-code testing
8	28-Mar	*spring break*
9	3-Apr	documentation
10	10-Apr	LaTeX
11	17-Apr	careers
12	24-Apr	in-class presentations