CH410/510 Scientific Computing Syllabus

- The class will meet Mon and Wed for 1 hr, and then Fri for 2 hr.
- In general, Mon and Wed will be instruction days where we cover new programming material. Fri will be an open "lab" where you will work on exercises in class.

Contact

- Mike Harms (harms@uoregon.edu)
- Zach Sailer (zsailer.uoregon.edu)

Grading

Assignments

- In the first two weeks, there will be micro-homework sets, due at 11:59 pm each day. The goal of these is to force you to practice programming in short stretches every day.
- There will be 7 labs. We will start the labs on Fri in class. They will be due the following Wed in class.
- Project prospectus (Due May 12)
- Final project (Due June 12)

Schedule

Date	Topic	Due
Mon 4/3	Getting set up: `python`, `jupyter`, and `git`	
Wed 4/5	Introduction to python and the jupyter notebook. Python as a calculator.	HW1a
Thu 4/6		HW1b
Fri 4/7	Conditionals, loops, lists, numpy arrays.	HW1c
Mon 4/10	Functions and namespace.	HW1d
Tue 4/11		HW1e
Wed 4/12	Graphing and matplotlib.	HW1f
Thu 4/13		HW1g
Fri 4/14	**Lab**: Programming Puzzles	HW1h
Mon 4/17	**Simulation**	

Wed 4/19		HW2 (puzzles)
Fri 4/21	**Lab**: Simulating an experiment	
Mon 4/24	**Model Regression**: `scipy.optimize`	
Wed 4/26		HW3 (simulation)
Fri 4/28	**Lab**: Fitting stuff	
Mon 5/1	**Classification with machine learning**	
Wed 5/3		HW4 (fitting)
Fri 5/5	**Lab**: Classification with machine learning	
Mon 5/8	**Molecular structures**	
Wed 5/10		HW5 (machines)
Fri 5/12	**Lab**: Calculating structural properties	Project prospectus
Mon 5/15	**High-throughput sequencing**	
Wed 5/17		HW6 (structure)
Fri 5/19	**Lab**: Analyzing high-throughput sequencing *Mike Gone*	
Mon 5/22	**Microscopy images**	
Wed 5/24		HW7 (HTS)
Fri 5/26	**Lab**: Analyzing microscopy images	
Mon 5/29	Memorial Day. No class.	
Wed 5/31	Final project in class	HW8 (images)
Fri 6/2	Final project in class	
Mon 6/5	Final project in class	
Wed 6/7	Final project in class	
Fri 6/9	Final project in class	
Mon 6/12	---	Final project