

Python and UNIX Scripting

Spring 2015

“Computer Scientists develop the tools that allow others to make a difference in the world.” Fred Brooks

Instructor:

Dr. Lori Carter

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office: RS 214

Office hours:

MWF 8:30-9:30, 1:00-1:30

TTh 10:30-11:30, 2:30-3:30

Text:

Practical Computing for Biologists, Haddock and Dunn. **We will frequently be using the text in class.**

Class Learning Outcomes:

- Students will be able to use UNIX and Python scripting as tools to perform basic tasks
 - Navigate the UNIX command-line operating system; Use regular expressions for data transformation; UNIX scripts to automate tasks; Basic Python scripting along with an introduction to more advanced topics such as BLAST interaction, simulations, and image processing,
- Students will gain an understanding of how these tools can be used in a science context
- Students will gain practice working with people in other disciplines

Course Organization:

Lectures: Cover the highlights of chapters assigned – not a substitute for reading. Student versions of the lecture slides can be obtained from Canvas. These slides will contain homework assignments and due dates.

Labs: Lab assignments may be completed individually, or in a group of 2. If you are working in a group, and your quiz answers (see below) demonstrate that you are not learning the material, the privilege of working in a group will be revoked. If you are working individually on your lab, and your quiz grades indicate that you are not learning the material, I will likely meet with you to discuss the way you are completing the labs individually. **No late labs are accepted.** However, I will drop the lowest lab grade and you may turn in any unfinished lab on time for partial credit.

Quizzes: Approximately every 2 weeks you will be given an in-class quiz which will cover the basics of the reading, lecture and lab material. I will drop your lowest quiz grade. These quizzes are meant to be very high level, to see if you are keeping up with the material.

3 minute interdisciplinary presentations: The expectation is that **everyone will do at least one 3 minute presentation** with peers providing a ranking, comments, and a summary. The 3 minute presentation is a presentation on something in your discipline, directed to people not in your discipline, providing a “just enough” understanding of a topic in words they can understand. The presentation as well as the audience summaries will be graded. Your presentation will hold the weight of 3 summaries. The 2 lowest summary scores will be dropped.

Exams: There will be 2 exams. If you will miss an exam for a school function, you must arrange to take it in advance. **If you ever miss an exam without giving me prior notice, there is a good chance you will receive a zero unless, of course, there was clearly an emergency.** Exam content can include material from lectures, the textbook, labs, and 3 minute presentations. Exam 1 is scheduled for **Feb. 17**. It will cover chapters 1 – 6 in your textbook. Exam 2 is scheduled for **April 9** and will emphasize chapters 7-10 in your textbook plus labs and lecture material covered since the last exam.

Final Exam: Your cumulative final exam will be **Thursday of finals week at 10:30 AM**. The emphasis will be on choosing the correct tool for a particular scenario, and explaining how that tool would be used.

Grading:

3 min. presentations	10%	Quizzes	10%
Exams	25%	Final Exam	20%
Labs	35%		

Final grades will be determined as follows:

100-93%	A	80-82%	B-	67-69%	D+
90-92%	A-	77-79%	C+	63-66%	D
87-89%	B+	73-76%	C	60-62%	D-
83-86%	B	70-72%	C-	0-59%	F

Attendance:

Attendance is expected at each class section. In the event of an absence you are responsible for the material covered in class and the assignments given that day. See the Point Loma Nazarene University Catalog for a statement of the university’s policy with respect to attendance. Remember that missing more than one and a half week’s worth of classes can result in a failing grade.

Academic Accommodations:

While all students are expected to meet the minimum academic standards for completion of this course as established by the instructor, students with disabilities may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Once the student files documentation, the Disability Resource Center will contact the student’s instructors and provide written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student. This policy assists the University in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with disabilities and guarantees all qualified students equal access to and benefits of PLNU programs and activities. **Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.**

Class Enrollment:

It is the student’s responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Academic Honesty

The Point Loma Nazarene University community holds the highest standards of honesty and integrity in all aspects of university life. Academic honesty and integrity are strong values among faculty and students alike. Any violation of the university’s commitment is a serious affront to the very nature of Point Loma’s mission and purpose. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one’s own when in reality they are the results of another person’s creativity and effort. Such acts include plagiarism, copying of class assignments, and copying or other fraudulent behavior on examinations.

A student who is caught cheating on any item of work will receive a zero on that item and may receive an "F" for the semester. See the PLNU Catalog for a further explanation of the PLNU procedures for academic dishonesty.