CMPS 5P: Introduction to Programming in Python

Spring 2011

Basic Information

Lectures: MWF 2:00–3:10 PM in Baskin 156
Labs (in Baskin 105): Mon 4–6 PM; Tue 9–11 AM; Wed 10–noon; Thu 6–8 PM
Instructor: Professor Ethan Miller (elm@cs.ucsc.edu)
Office: 365 Engineering 2
Hours: Wed 3:30–4:30 PM and Fri 10:30-11:30 AM

TA: Brian Madden (madden@cs.ucsc.edu)
Office: 380 Engineering 2
Hours: Tue 1–2 PM and Thu 11–noon

Reader / tutors: TBD
Staff email cmsp5p-staff@cs.ucsc.edu

Course Overview

The goal for students in this class is to learn the basics of computer programming and debugging using the Python language. Students will learn about common data types (integers, floating point numbers, strings), variables and assignments, and control flow (conditionals, loops, iterators, and function calls). Students will also learn techniques of top-down design and modular code. Specific topics to be covered include:

• Introduction: What is a program? How is a program edited and run? How are results given to the user? What is this “command line” thing?
• Variables and expressions
• Functions
• Strings
• Modules
• Lists
• Control flow: conditional expressions, iteration and looping
• Files
• Dictionaries and sets
• When things go wrong: debugging and exceptions
• Applications, such as:
  • Graphical interfaces
  • Numerical computing
  • Codes

Prerequisites

There are no prerequisites for this class, other than intellectual curiosity (very important!) and a desire to learn how to program. If you’ve had formal programming experience at the college level, this might be the wrong class for you, even if you do want to learn Python. If this description applies to you, you’re encouraged to talk with Prof. Miller to see if you’ll benefit from the class.
Textbook

We’ll be using *Practical Programming: An Introduction to Computer Science Using Python* (Campbell, Gries, Montojo, Wilson) as the textbook for this class. This book isn’t stocked at the bookstore; rather, you can buy it online at [http://www.pragprog.com/titles/gwpy/practical-programming](http://www.pragprog.com/titles/gwpy/practical-programming). The book is available in either electronic format, paperback book, or both.

You’re required to purchase the electronic copy (it’s only $22.00); you may purchase the paper book in addition if you wish. The reason that you’re required to purchase the electronic copy is that the authors have been kind enough to make the book available without copy protection, so you can read it on any platform (it’s available as PDF as well as formats for the Kindle and iPad). To ensure that students in the class don’t hand off copies to others, which would be very unethical, we’re requiring everyone to buy their own copy. And, in case you were wondering, nobody at UCSC gets a cut of the purchase price, so that’s not a reason behind this.

Online Resources

Most of the material in this class will be available online at [http://ecommons.ucsc.edu/](http://ecommons.ucsc.edu/). You’ll need your CruzID Gold password to log in, and you need to be enrolled in the class to access the site.

Assignments, Exams & Grading

Exams

There will be an in-class midterm in early May and a final during the scheduled slot in final exam week.

Quizzes

There will be 6–8 in-class quizzes over the quarter to ensure that you’re keeping up with the material. Each quiz will have a few questions, and should take no longer than 10–15 minutes. Quizzes won’t be announced in advance; however, your quiz grade will exclude your lowest-scoring quiz, so you can miss one quiz without penalty.

Assignments

There will be one assignment per week over the course of the quarter. Assignments will typically involve programming, though they may involve other activities as well.

Assignments are usually due on Mondays at noon (please see the assignment for any variations), and are turned in online via eCommons. Grades and comments will be returned online, typically within ten days of the due date.

You must turn in your assignments on time. Rather than approve extensions on a case-by-case basis, each student has 4 “grace days” that may be used, no explanation necessary, to extend the due date of an assignment. Grace days need not all be used on the same assignment—you can use all four on a single assignment, or use one each for four different assignments (or any other combination). Once you’ve used them up, though, *late assignments will receive a grade of zero*. Period. Use your grace days wisely.

Term Paper

There will be a short term paper due on some aspect of computer history, based on a trip you will make to the Computer History Museum in Mountain View. Details on this paper will be available in the first two weeks of class.
Grading

Grades in the class will be assigned as follows:

- Programming assignments: 40%
- Term paper: 5%
- Quizzes: 10%
- Midterm: 15%
- Final: 28%
- Class participation: 2%

To pass the class, you must do the following:

- Have at least a 50% average on your exams. A low grade on one exam can be countered by a good grade on the other exam.
- Have at least a 50% average on your programming assignments.
- Turn in a term paper on your visit to the Computer History Museum.
- Turn in all of the programming assignments. If you miss an assignment due date and have no grace days left, you still have to turn in a reasonable attempt at the assignment, though you will receive a zero for it.

Note that a 50% average on both exams and assignments is not sufficient to pass—a 51% on exams and 53% on assignments will likely result in a failing grade.

You do not have to take all of the quizzes to pass the class. Your quiz average will be calculated by dropping your lowest quiz score and averaging the remainder. A quiz you don’t take is a zero, so your grade will suffer if you miss too many quizzes. However, quizzes make up only 10% of your grade, so it’s not the end of the world if you miss more than one quiz.

Your class participation grade is based on several factors: actually participating in lecture (asking questions, etc.), visiting office hours, and participating in lab sections. It’s only 2% of your grade, so it won’t determine whether you pass or fail, but it’s how we decide whether to give you an A- or B+ if you’re right on the border.

We expect to use the following approximate ranges for overall scores. Individual assignments may be curved, but there is no guarantee of this.

- A: 89–100%
- B: 79–89%
- C: 69–79%
- D: 60–69%
- F: below 60%

Accommodations for Students with Disabilities

If you qualify for classroom accommodations because of a disability, please get an Accommodation Authorization from the Disability Resource Center (DRC) and submit it to the professor or TA in person outside of class (e.g., office hours) within the first two weeks of the quarter. For more information on the requirements and/or process, contact DRC at 459-2089 (voice), 459-4806 (TTY), or at http://drc.ucsc.edu/.

Attendance

You’re expected to attend lecture and one lab section per week. The lab sections in a given week will all cover the same material, but you’re welcome to attend more than one if you think you’ll benefit from it.
We won’t take attendance at lecture or lab section but, as noted above, there will be unannounced quizzes at lecture. Needless to say, we recommend attending every lecture, and not just because of the quizzes. We hope that the lecture helps you better understand the material, and would appreciate any feedback on how we can improve the class.

Office hours are, of course, entirely optional, though it’s a good time to talk with someone one-on-one and get help. It’s also a good opportunity to discuss other topics that may only be tangentially related to the class. Many students find that discussions in office hours are highly informative and interesting, and it usually helps faculty members write you better recommendations for jobs and graduate school.

Getting Help

You’re strongly encouraged to seek help if you need it. You can do this by going to office hours, reading the course forum on eCommons, or by email. Office hours are optional, but highly recommended if you’re having any difficulty understanding the material, doing the homework assignments, or working on the term project. More in-depth discussions of course-related topics are also appropriate (and encouraged) during office hours. You’re welcome to use the course forum and send email whenever you want, but please arrange any meetings outside of office hours in advance.

We encourage you to use the course web forum to post general questions. Asking things like “how does this concept work?” or “can someone help install this Python editor” are fine. Questions such as “can someone post sample code for Assignment 2” are not acceptable. Please ask such questions during office hours (preferable) or via email.

Email to the course staff (cmps5p-staff@cs.ucsc.edu) will be answered if possible. The best kinds of questions to ask via email are those that require short answers. Questions like “why doesn’t my program work?” and “please explain this concept to me” are much more difficult to answer via email, and are best asked and answered in person at office hours. Please keep in mind, too, that email replies may take several hours, depending on when the course staff read and respond to email.

Professor and TA office hours are listed on the syllabus, and tutor office hours will be set during the first week of the quarter. These hours are subject to change; if you’d like to see office hours at a different time, please let us know.

Academic Honesty: Collaboration vs. Cheating

You are expected to conduct yourself as a person of integrity—you are expected to adhere to the highest standards of academic integrity. This means that plagiarism in any form is completely unacceptable.

Plagiarism will be assumed, until disproved, on work that is essentially the same as that of other students. This includes identically incorrect, off-the-wall, and highly unusual duplicate answers where the probability of a sheer coincidence is extremely unlikely. All parties to this unacceptable collaboration will receive the same (zero) score. In the case of programs, reordering program code, moving files around, changing comments, or simply renaming variables does not make two programs different. Remember—a zero score on either exam is grounds for failing the course. Those caught cheating will, in addition to a zero score on the assignment or exam, have a letter sent to their department, the School of Engineering, and their college provost and academic preceptor. We reserve the right to take stronger action, such as assigning a class grade of F, should the situation warrant it.

You’re welcome to discuss concepts covered in class or given as assignments, but you may not discuss details of the assignments themselves. Looking at, modifying, or copying each other’s files or solutions is strictly forbidden. If you are unsure of what is and is not allowed by this policy, please talk to Prof. Miller before doing something that might be considered cheating.