Course Syllabus
CS 161: *Introduction to Programming and Problem-solving*
Dept. of Computer Science/Portland State University
Winter 2013
January 8, 2013 - March 19, 2013

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TAs/Graders. Jenner Hanni and Aparna Sawant

Time and Location. Tuesday/Thursday evenings from 6:40-8:30 in UTS 206.

Text. Michael Dawson, *Python Programming for the Absolute Beginner*, 3rd edition, Course Technology 2010, ISBN 1435455002.

Course Goals. To introduce students to the fundamental concepts of computing, problem solving, the design of algorithms for solutions, and the translation of tested algorithms into a high-level computer program. Topics include:

- Solving Problems with Computers
- Algorithms– What they are and how to write them
- Introduction to high level programming languages
- Understand data types, variables, conditionals, loops, functions, and arrays
- Social and ethical aspects of computing
- Software design, test and debugging

The Moodle. Located at http://moodle.svcs.cs.pdx.edu/course/view.php?id=16, this web site will provide access to all resources used in the class. *Sign up for the moodle using your pdx.edu e-mail address*. You should read your e-mail and visit the moodle daily to receive announcements and learn about schedule changes. You will be responsible for any information posted to the moodle or e-mailed to you. "I didn't read my e-mail" will not be an acceptable excuse.

Infrastructure: Students will need to obtain an MCECS user account for Linux and Windows. These can be obtained from the tutors (http://cat.pdx.edu/tutors.html) in FAB 88. You should get to know the tutors in FAB 88 anyway, and this is a good way to start. The tutor hours are 11AM-6PM during the week, and 12-5PM on Saturday. *Get your accounts before the second class meeting!*

We will be using Python, Version 3.x in this class. If you have your own desktop or laptop computer you can download Python Version 3.x from: http://python.org. This will allow you to use Python at home. You may also remotely login to the CS Linux Lab (linux.cecs.pdx.edu) using a client such as PuTTY and run your

programs at the shell using “python3” (not “python”). FAB 88 contains both a Linux Lab and a Windows Lab for local machine access as well. *Important: do not use Python, Version 2.7.3 (or any earlier version); it uses a different syntax from the syntax of Version 3*.

Time Expectations. The standard policy at PSU is an average of at least 2 hours of work outside class for every hour in class. For a 4 credit class like CS161, this means an expectation of at least 8 hours of productive out-of class work per week for an average student.

Attendance Policy. Attendance is mandatory. If for some reason, you miss a class, make sure you get copies of notes, handouts, announcements and other materials from another student. This will require that you develop a network of fellow students who can serve as study partners, information resources, etc. We will take roll, and students will be randomly called upon to answer questions. If you don’t show up on our roll sheet, or you get called upon and don’t answer the question, you’ll get zero class participation points for that class.

Grading. *All categories in the grading table must receive a passing score (65%) in order for you to pass this class.* Cheating or unattributed use of others’ work will result in a score of zero for the particular artifact. Grades will be based on the following table:

Item	**Quantity**	**Points**
Homework	5 @ 20pts each	100
Exam	2@100pts each	200
Proficiency Demo	2 @ 50 pts each	100
Class Participation	16 classes + questions	100
Total		**500**

Homework, Exams and Proficiency Demos. Most homework will entail writing a computer program and preparing ancillary resources as specified in the assignment. *In order to pass the class, you will have to average 13 points out of 20 on each homework.* The Midterm and Final will be in-class and cumulative over all material covered to date. The in-person proficiency Demo is an all-or-nothing session with one of the instructors or the TA where you will write a simple (relative to the material we will have covered) Python program from scratch, enter it into the computer and run it. *Each proficiency demo will have to be successfully completed in order to pass the class.* Class participation is discussed in the section on the Attendance Policy.

Extraordinary Situations. If an extraordinary situation (for example severe illness) prevents you from working for a period of time, contact us as soon as possible to discuss your situation and arrange a special schedule. Scheduled work commitments do not constitute an emergency. Requests for re-grading must be submitted to the instructor *in writing* within one week of the time the

graded assignment was made available. You must be specific in saying why you feel your answer deserves additional credit. A request for re-grade may result in a re-evaluation of the entire assignment and your total grade may increase or decrease as a result. Makeup exams will not be given except in cases of severe and documented medical or family emergencies. Please note that travel is not considered an emergency. If an emergency arises and you miss an exam, contact the instructor *before* the exam to arrange for a special circumstance.

Students with Disabilities. Accommodations are collaborative efforts between students, faculty, and the Disability Resource Center. Students with accommodations approved through the DRC are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through the DRC should contact the DRC immediately. The DRC may be reached at 503-725-4150 or visit the DRC web page: http://www.drc.pdx.edu/.

Tips. Pay attention in class. Take notes. Show up for class every day, on time. Do your work products promptly. Have the reading done before showing up for class. Don't whine and don't make excuses. What you get out of anything in life is proportional to what you put in. It doesn't get any easier and the answer probably isn't going to suddenly come to you out of the blue.

Opportunity is missed by most people because it comes dressed in overalls and looks like work: Thomas A. Edison

Date	Lecture Topic	Chapter Readings Due *Before* Class	Homework
January 8, 2013	What's a computer and how do I program it? *An introduction to the class, computers and programs*		
January 10, 2013	Programming tools and practices *Setting up Python & IDLE, a simple program*	Chapter 1	HW 1 Assigned
January 15, 2013	Learning how to program *Variables and simple I/O*	Chapters 2, 3	HW1 Due
January 17, 2013	Algorithms *Control flow & simple loops*		HW 2 Assigned
January 22, 2013	Program correctness *More complex loops*	Chapter 3	HW2 Due
January 24, 2013	Debugging		
January 29, 2013	***In-Person Proficiency Demo – attend your scheduled session***	Chapter 3, 4	
January 31, 2013	Sequences *For Loops & Strings*		HW 3 Assigned
February 5, 2013	Source code management		HW3 Due
February 7, 2013	***Midterm Exam over Chapters 1-4***		
February 12, 2013	Tuples	Chapter 4, 5	
February 14, 2013	Lists		HW 4 Assigned
February 19, 2013	Modular programming *Abstraction*	Chapter 6	HW4 Due
February 21, 2013	Variable Scope *Global and local variables*		
February 26, 2013	Data Persistence *Files*	Chapter 7	
February 28, 2013	Interacting with the Real World *Exceptions*		HW 5 Assigned
March 5,2013	Computing as a profession, opportunities and responsibilities		HW5 Due
March 7,2013	***In-Person Proficiency Demo – attend your scheduled session***		
March 12, 2013	Object oriented programming *Classes, methods, attributes, encapsulation*	Chapter 8	
March 14, 2013	Review		
March 19, 2013	Final Exam Over Chapters 1-7	***7:30PM!***	

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