Programming in Python

ITP-115 (2 units)

USC Viterbi School of Engineering

Objective

This course is intended to teach the basics of programming in Python. Python's high level data structures and clear syntax make it an ideal first language, while the large number of existing libraries make it suitable to tackle almost any programming tasks.

Concepts

Python offers an interactive environment in which to explore procedural, functional and object oriented approaches to problem solving.

Prerequisites	none
Instructor	Trina Gregory
Contacting the Instructor	trinagre@usc.edu 213.740.4542
Office Hours	http://bcf.usc.edu/~trinagre
Lab Assistants	Listed on Blackboard under Contacts
Contacting the Course Assistants	Listed on Blackboard under Contacts
Lecture/Lab	3 hours / week

Required Textbooks

Punch, William F. The Practice of Computing Using Python (3rd edition). Pearson, 2016 (you do not need MyProgrammingLab)
ISBN: 0134379764
Purchase: Amazon

Website

All course material will be on Blackboard (http://blackboard.usc.edu).

Grading

Participation	5%
Assignments	50%
Midterm	20%
Final Project	25%

Grading Scale

A	100-93	B-	82-80	D+	69-67
A-	92-90	C+	79-77	D	66-65
B+	89-87	C	76-73	F	64 or below
B	86-83	C-	72-70		

Final grade percentages are calculated to two decimal places. For example, 82.45 is a B-.

Policies

Students are expected to:

- Attend and participate in lecture discussions and critiques
- Attend and complete weekly assignments
- Manage and complete individual class projects

Software

The software needed for this course is available for free online. All homework and projects will need this software to be completed (available for Mac and Windows).

Python 3.x https://www.python.org/downloads/

You will also need to download and install PyCharm, which is an integrated design environment (IDE) for writing code and creating project. You may feel free to use another IDE such as Eclipse or NetBeans, especially if you are already familiar with one.

PyCharm http://www.jetbrains.com/pycharm/download/

*Choose the **Free Community Edition***

Late Work

Assignments may be turned in with a late penalty of 25% per day. This will apply to assignments immediately after the deadline. It is the responsibility of the student to contact the grader when posting late projects. After four days, submissions will not be accepted and you will receive a 0.

If you register for the class after assignments are due, then you must turn in any missed work within three days from the day you registered. If you registered on a Friday, then all missed work needs to be submitted by the end of day on Monday.

ITP Labs

Before logging onto an ITP computer, students must ensure that they have emailed or saved projects created during the class or lab session. Any work not saved will be erased after restarting the computer. ITP is not responsible for any work lost.

ITP offers Open Lab use for all students enrolled in ITP classes. These open labs are held beginning the second week of classes through the last week of classes. Specific times, days, and location for the current semester are listed at http://itp.usc.edu/labs.

Exams

No make-up exams (except for documented medical or family emergencies) will be offered. If you do not take an exam, then you will receive a 0.

Incomplete and Missing Grades

Excerpts for this section have been taken from the University Grading Handbook, located at http://www.usc.edu/dept/ARR/grades/gradinghandbook/index.html. Please see the link for more details on this and any other grading concerns.

A grade of Missing Grade (MG) "should only be assigned in unique or unusual situations… for those cases in which a student does not complete work for the course before the semester ends. All missing grades must be resolved by the instructor through the Correction of Grade Process. One calendar year is allowed to resolve a MG. If an MG is not resolved [within] one year the grade is changed to [Unofficial Withdrawal] UW and will be calculated into the grade point average a zero grade points.

A grade of Incomplete (IN) "is assigned when work is no completed because of documented illness or other 'emergency' **occurring after the twelfth week** of the semester (or 12th week equivalency for any course scheduled for less than 15 weeks)."

Statement on Academic Conduct and Support Systems

Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct/.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* http://equity.usc.edu/ or to the *Department of Public Safety* http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* http://www.usc.edu/student-affairs/cwm/ provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* http://emergency.usc.edu/ will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

A Note about Collaboration and Cheating

Assignments and projects in computer programming course are different from those in some other types of courses. Students may **NOT** collaborate, work together, share code, or in any way exchange solutions for assignments and projects. All assignments are analyzed by software that looks for similarity. Any sharing of ideas or code will be considered a violation of academic

integrity (cheating): students involved will receive an F for the course and an SJACS report will be filed.

Emergency Preparedness/Course Continuity in a Crisis

In case of emergency, when travel to campus is difficult, if not impossible, USC executive leadership will announce a digital way for instructors to teach students in their residence halls or homes using a combination of the Blackboard LMS (Learning Management System), teleconferencing, and other technologies. Instructors should be prepared to assign students a "Plan B" project that can be completed 'at a distance.' Additional information about Campus Safety and Emergency Preparedness can be found at: http://preparedness.usc.edu.

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Course Outline

Subject to change throughout the semester

Week	Topic	Reading	Assignment
1	Intro to course + Python: types, variables, i/o	ch. 1	A# 1
2	Flow of Control: branching, if/else, boolean, modules	ch. 2	A# 2
3	Loops and Strings as Sequences	ch. 2, 4	A# 3
4	Lists and Tuples	ch. 7	A# 4
5	Functions	ch. 6, 8	A# 5
6	Files	ch. 5	A# 6
7	Dictionaries	ch. 9	A# 7
8	Objects	ch. 11	A# 8
9	Midterm	-	study
10	OOP	ch. 11	A# 8
11	Inheritance	ch. 12	A# 9
12	GUI	notes	A# 10
13	Graphics	notes	project
14	Exceptions	ch. 5	project
15	Python Grab Bag	notes	project
16	Final Projects Due	-	-