USC Viterbi
School of Engineering
Information Technology Program

ITP-116
Accelerated Programming in Python

Units: 2
Semester: Fall 2021
Day: Monday/Wednesday
Time: 10:00-10:50a.m. or 11:00-11:50a.m.
Location: TBD

Instructor: Jeffrey Miller

Office: Listed on Blackboard
Office Hours: Listed on Blackboard
Contact Info: Listed on Blackboard

Teaching Assistants: Listed on Blackboard

Office Hours: Listed on Blackboard
Contact Info: Listed on Blackboard

IT Help: Viterbi IT

Hours of Service: Monday – Friday, 8:30 a.m. – 5:00 p.m.
Contact Info: (213) 740-0517
Email: engrhelp@usc.edu

Last updated: 3/2/2021

Course Description

The course is intended to teach the fundamental concepts of the Python programming language to those students who already have experience with a previous programming language. Python's high level data structures and clear syntax make it a versatile language, while the large number of existing libraries make it suitable to tackle almost any programming tasks. Python offers an interactive environment in which to explore procedural, functional, and object-oriented approaches to problem solving.

Learning Objectives

- Learn the syntax of the Python programming language.
- Implement programs that use Python coding conventions in industry.
- Implement programs that read from and write to files.
- Demonstrate an understanding of data structures by using them to manage data.
- Demonstrate an understanding of object-oriented programming by creating classes and corresponding objects in the implementation of the solution to a given problem.

Prerequisite(s): None
Co-Requisite(s): None
Concurrent Enrollment: None
Recommended Preparation: Programming experience

Course Notes

This course will use Blackboard (https://blackboard.usc.edu) for all content and assignments. You will need to watch videos posted on Blackboard before synchronous class sessions. During the class sessions, the instructor will lead interactive activities to reinforce the concepts covered in the videos. Lecture slides and any supplemental course content will be posted to Blackboard for use by all students. All assignments will be posted to Blackboard and will be submitted through Blackboard. Please familiarize yourself with Blackboard before the course begins.

Technological Proficiency and Hardware/Software Required

Students will need a computer (laptop or desktop) and access to the internet. If you do not have access to a computer, please see below. All software needed for the course is available for free.

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). Download the latest version of Python 3.
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

USC technology rental program/ITP loaner devices

We realize that attending classes online and completing coursework remotely requires access to technology that not all students possess. If you need resources to successfully participate in your classes, such as a laptop or internet hotspot, you may be eligible for the university's equipment rental program. To apply, please submit an application. The Student Basic Needs team will contact all applicants before the semester and distribute equipment to eligible applicants prior to the start of the semester.

USC Technology Support Links

- Zoom information for students
- Blackboard help for students
- Software available to USC Campus

Required Readings and Supplementary Materials

Wentworth, P., Elkner, J., Downey, A. B., Meyers, C. (2012). *Learning with Python 3: How to Think Like a Computer Scientist*. http://openbookproject.net/thinkcs/python/english3e/

Grading Breakdown

Category	% of grade
Coding Assignments (weighted proportionally)	40%
In-Class Labs	10%
Exam #1	15%
Exam #2	15%
Final Project	20%
TOTAL	100%

Grading Scale

Course final grades will be determined using the following scale

A	>= 93
A-	>= 90 and < 93
B+	>= 87 and < 90
B	>= 83 and < 87
B-	>= 80 and < 83
C+	>= 77 and < 80
C	>= 73 and < 77
C-	>= 70 and < 73
D+	>= 67 and < 70
D	>= 65 and < 67
F	< 65

General Policies

Students are expected to:

- Attend (or watch videos of) lectures and complete the in-class labs
- Complete the individual assignments
- Complete the exams
- Complete the final project

Adding the Course after Week 1

Per university policy, students are allowed to add the course until the end of week 3. Any students wishing to add the course should plan on attending the course from the beginning of the semester. Upon adding the course after week 1, the student should email the instructor immediately to make a plan for completion of work and learning missed materials. Any missed work is required to be completed and submitted according to the schedule provided by the instructor. If you register for the class after assignments/labs are due, then you will have one week from when you registered for the class to submit the assignments. If you add the class during the third week of classes, then you must meet with the instructor to create a plan together on how to catch up to the rest of the class. By the end of week 3, three labs and two assignments are due.

Assignment Rubrics

Assignment rubrics will be available on Blackboard in the assignment instructions.

Assignment Submission Policy

There will be roughly one assignment due each week through week 12. Assignments are typically due on Friday by 11:59p.m. Pacific time. Each assignment covers the material from the previous week. For example, Assignment 1 covers the material from week 1, and is due at the end of week 2. The assignments will be posted in Blackboard under the “Assignments” section. Each assignment will include instructions and a link for electronic submission. Assignments must be submitted using this link. Each assignment must be completed individually. Do not collaborate with other students for these assignments. If you need help, please post on Piazza.

Assignment Late Policy

It is the student’s responsibility to submit assignments on or before the due date. Assignments may be submitted within three days with a late penalty. Assignments turned in one day (24 hours) late will have 10% of the total points deducted from the graded score. Assignments turned in over one day and up to two days (> 24 hours and <= 48 hours) late will have 30% of the total points deducted from the graded score. Assignments turned in over two days and up to three days (> 48 hours and <= 72 hours) late will have 50% of the total points deducted from the graded score. After three days, submissions will not be accepted, and the score for the assignment will be a 0.

Assignment Grading Timeline

Assignments will be graded within two weeks (and hopefully sooner). Students have one week to contest a grade once it has been posted on Blackboard. After this one week, the grade will not be changed. To contest a grade, create a private post on Piazza. In the post, include your name, the assignment name, and your reasons. This will allow the grader, instructor, and CTAs (Course Teaching Assistants) to view your submission and make a decision.

In-Class Labs

There will be in-class labs, one for each week from week 1 through week 12. Labs are due on Thursday each week by 11:59p.m. Pacific Time. The labs should be done the day they are assigned, but the deadline is extended to allow students who are unable to attend the class to still complete the lab. Labs must be submitted on Blackboard. Late labs will not be accepted.

Exams

No make-up exams (except for documented medical or family emergencies) will be offered. If you will not be able to attend an exam due to an athletic game or other valid reason, then you must coordinate with the instructor before the exam is given. You may arrange to take the exam before you leave, with an approved university personnel during the time you are gone, or within the week the exam is given. If you do not take an exam, then you will receive a 0 for it.

If you need accommodations authorized by DSP (Disability Services and Programs), notify the instructor at least two weeks before the exam to allow time for arrangements to be made.

Final Project

The final project replaces the final exam. This comprehensive assignment will be due during Finals Week. The final project needs to be submitted by the due date. Late projects will not be accepted and will receive a 0. You must plan and implement a multiple-class full-functioning application in Python of your own design. The program must use appropriate data structures, read and store data to files, allow for user interaction, and demonstrate other concepts learned during the course. Use proper coding styles and comments. Project should perform error-checking (on all inputs). A project must represent the student's sole effort; online tutorials or other examples may be consulted, but they must be improved upon and noted in the final documentation. Failure to note and provided links to any reference material will be considered cheating.

You will write a proposal document with the following details: motivation and need, Python libraries you expect to use, Python classes you expect to create, program flow, and your proposed grading criteria. Below are sample grading criteria that may be used.

Final Project Rubric

Item	**Points**
Proposal	10
Readme file	10
Comments and proper coding style	10
Use of external Python module	10
Coded at least 2 Python classes	10
File reading and writing	20
User interface and error checking	10
Executes successfully and meets proposal	20
TOTAL	100

Attendance

Attendance is not part of the grading breakdown, although attending lectures will help you learn the material and succeed in this class.

Academic Integrity

SCampus is USC's Student Guide to Policies and Conduct Code and can be found at http://scampus.usc.edu. Students will be referred to the Office of Student Judicial Affairs and Community Standards (SJACS) for further review, should there be any suspicion of academic dishonesty. The review process can be found at http://www.usc.edu/student-affairs/SJACS/.

Assignments and projects in computer programming courses 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. Assignments may be analyzed by software that looks for similarity. Any sharing of ideas or code will be considered a violation of academic integrity (cheating); an SJACS report will be filed with the recommended penalty of an F in the course. Do not share your code with anyone else in this or a future section of the course, as allowing someone else to copy your code carries the same penalty as you copying the code yourself.

If the instructor, a grader, or a lab assistant suspects you of academic dishonesty, it has to be reported to SJACS. Do not share assignments with another person. Do not submit another person's work as your own. Do not tell current or future students about questions on tests. Do not cheat! As Trojans, we are faithful, scholarly, skillful, courageous, and ambitious.

Sharing of Course Materials

Do not reproduce, distribute, or post any lecture material, assignments, or tests publicly without the written consent of the instructor. Students may take notes and make copies of course materials for their own use. They may not post the course materials on sites such as CourseHero. Doing so is a copyright violation and an academic integrity violation that will be dealt with accordingly.

Here is USC's policy that prohibits sharing of any synchronous and asynchronous course content outside of the learning environment from SCampus Section 11.12(B).

> Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the Internet or via any other media. (See Section C.1 Class Notes Policy).

Course Schedule: A Weekly Breakdown

Week	Dates	Topics/Daily Activities	Readings	Deliverable
1	Aug 23-27	Class Introduction Python (print, input, variables)	Chapters 1-2	Installation of Python and PyCharm
2	Aug 30-Sep 3	Expressions and Operators Branching and Boolean Expressions	Chapter 5	Mad Libs
3	Sep 6-10	While Loops For Loops	Chapter 7	Vending Machine
4	Sep 13-17	Strings Processing Lists	Chapter 8	Looping
5	Sep 20-24	Lists and Tuples Lists and Strings	Chapter 11	Ciphers
6	Sep 27-Oct 1	Test #1		
7	Oct 4-8	Functions Part1	Chapter 4	Airplane Seating
8	Oct 11-15	Functions Part2	Chapter 6	Rock, Paper, Scissors
9	Oct 18-22	Files (read and write)	Chapter 13	Tic Tac Toe
10	Oct 25-29	Dictionaries and Sets	Chapter 20	Language Translator
11	Nov 1-5	Objects Part1	Chapter 15	Music Library
12	Nov 8-12	Objects Part2	Chapter 16	Movie Database
13	Nov 15-19	Test #2		Final Project Proposal
14	Nov 22-26	Final Projects **Thanksgiving**	Chapter 12	Work on Final Project
15	Nov 29-Dec 3	Final Projects		Work on Final Project
FINAL			**Final Project:** Due during final exams week.	

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 Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.