

Computer Science Department
CS 22A-02: Python Programming for Non-Majors I
Fall 2020

Course and Contact Information

Course Number: 42966
Course Dates: August 20, 2020 to December 7, 2020
Class Days: Tuesdays & Thursdays
Class Meeting Time: 3:00 - 4:15 pm (Synchronous Virtual Meetings)
Instructor: Nadine Ferguson
Contact Information: Preferred method of contact is to use Canvas Inbox (Conversations).
Alternatively, you can use my email address nadine.ferguson@sjsu.edu
Office Hours: Virtual Office Hours on Thursdays 4:30 - 5:30 pm and by appointment
Prerequisites: This course is intended for students who have no prior programming experience.
This course is not open to computer science majors or minors or software engineering majors.

Course Description

This course is an introduction to Python Programming in interesting, relevant, and practical contexts. Programming skills will be developed to solve problems in such fields as Life Sciences, Mathematics, and Business. Students will learn fundamental programming constructs including data structures, algorithms, iterations, and functions.

Course Format:

The course will be conducted virtually over Zoom with synchronous lectures and interactive activities. Short quizzes will be used to check understanding during the lecture. CS 22A is a hands-on programming course. There is a significant hands-on component in this class and student participation during class is key to successful completion of the course. Lectures are accompanied with hands-on programming activity. Class time will be spent either in lecture mode or combination lecture-lab mode.

All course materials are posted on [Canvas Learning Management System](#). All assignments are submitted to Canvas. Students need an active SJSU email in order to access Canvas. Students are responsible for regularly checking the Canvas course and messaging system for updates and due dates.

Course Learning Outcomes (CLO):

Upon successful completion of this course, students will be able to:

CLO 1: Explain fundamental programming constructs such as assignments, sequential operations, iterations, conditionals, defining functions, and abstraction.

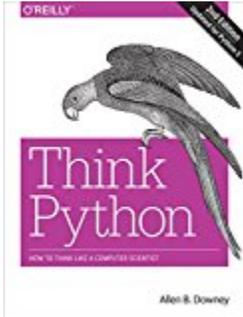
CLO 2: Analyze and explain the behavior of Python programs.

CLO 3: Apply fundamental programming constructs to solve computational problems.

Required Materials

Student-supplied equipment and materials necessary for course activities:

Textbook:



Think Python, Think like a Computer Scientist, 2nd Edition by Allen B. Downey
ISBN-13: 978-1491939369, ISBN-10: 1491939362

Textbook is available on Amazon. The pdf version of the text can be download from: <http://greenteapress.com/thinkpython2/thinkpython2.pdf>

Other Readings:

Additional course readings, code examples, etc. will be assigned and will be provided by the instructor.

Technology Requirements:

- A laptop or desktop computer with built-in functional webcam and microphone. It should be a fairly recent Mac or PC (not more than three years old) with a current OS. Do not use Chromebook
- Current browser
- Reliable and stable internet connection/Wi-Fi access
- Zoom web conferencing for synchronous class meetings
- Responds Lockdown Browser and Monitor for proctoring exams and quizzes

SJSU has a free equipment loan program available for students.

Grading:

Final grade is calculated based on the percentage of the total points for all the Course Requirements and Assignments (Hands-on Programming Assignments, Quizzes, and Exams)

Grading Scale:

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
0 – 59%	F

Course Requirements and Assignments

Course requirements, reading materials, hands-on programming assignments, and quizzes contribute to and are aligned with course learning outcomes. Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of three hours per unit per week for instruction, preparation/studying, or course related activities, including but not limited to labs, reading, assignments.

Programming Assignments	5-20 points each
Quizzes	5-10 points each
Midterm Exam	100 points
Final Exam (Cumulative)	100 points

Details of each course requirement is listed below:

Programming

Assignments: The goal of the weekly programming assignments is to reinforce lecture material

and programming skills. Weekly programming assignments will be assigned on Canvas. Assignments are submitted to Canvas for grading.

Each assignment submission including programming code will be checked for similarity. Students must write the code for their solutions on their own. Students must submit only their own original work, using concepts, constructs, methodology and techniques discussed in class. Copying code from online sources or implementing solutions based off code found on the internet will constitute a violation of the Academic Integrity Policy. Base your solutions from examples in the text, concepts and constructs discussed in class. Use of outside sources is not allowed and will be flagged. Code that is not sourced from the class may be penalized. Assignment are for individual work only. No group activity is allowed on assignments. This means that there should be no sharing of code or answers. **Sharing code or answers as well as looking at another student's code is considered plagiarism.** The work that you turn in must be original – meaning every single byte of the program must come from you. You are not allowed to look at anyone else's solution in any form (from other students, web sites, etc.). You may be asked to explain and demonstrate your code. **It is never okay to share your code or answers with other students.** If the other person submits your work, both students will get a grade of zero on the assignment, or fail the course, and an academic dishonesty report will be filed.

Any student who is found violating the academic integrity policy will receive a grade of zero on the assignment, or a grade of F in the course, and an academic dishonesty report will be filed. This will occur on the first infraction and will become part of the student's permanent academic record. See **Academic Integrity** under Policies.

Assignment Submission Requirement: Two files need to be submitted to Canvas for each lab and homework assignment:

- A Required Assignment Document. This is a documentation file (.docx or .pdf) showing the source code for the solution, your algorithm, and program output screenshot(s) of testing the program. A Required Assignment template will be provided on the course page.
- A working Python program file (.py file)

Both files must be submitted using Canvas assignment submission page, and not attaching files to the comments section of the assignment. Attached files will not be graded and receive no credit.

The interpreter is not the final judge of the correctness of your solution. Just because the program runs on your machine does not mean it is correct. The code must be correct for the solution to be correct.

Students are responsible for checking the validity of their submissions (file format error, blank files, corrupted files, etc.) and re-submit within deadline if needed. There will be no consideration for resubmission past the due date. Invalid files submitted will be graded as zero.

If you have any questions about how your assignment was graded, please email me within a week of the grade being posted. I will be happy to review the assignment for you. After the week has passed, the grade is considered final. No make-up or extra credit assignments will be given. It is the student's responsibility to keep current on all due dates. No work is accepted after the last day of instruction.

Late Assignments: No emailed or late assignments are accepted. The only exception will be made in the case of a documented and verifiable emergency with a signed doctor's note on the clinic or hospital's letterhead listing the class dates missed. Students should contact the instructor prior to the initial assignment due date if this is the case. If approved by the instructor, the student will be allowed to resubmit one assignment which will be graded with 30% off. The resubmission will need to be handed within one week from the date extension granted. Such an extension should be requested in writing from the instructor.

Quizzes: Short quizzes may be given any time during class. There are no make ups or late quizzes. The quizzes require an access code. Only students who attend lecture will receive the access code. Quizzes serve the purposes of the class attendance and participation. Students who participate in the class Zoom meeting will see the access code displayed on the screen during a random time in the lecture. Students who are not paying attention to the lecture may miss the access code and will not be able to submit the quiz. No extra credit quizzes will be available.

Exams: There will be two exams: a midterm and a final exam. The final exam is cumulative. Exam questions will be based on material covered in lecture, reading from the text, and programming problems. Questions are typically a mix of multiple choice, true/false, fill-in-the-blank, and programming problems. Exams are closed book, closed notes, closed internet, and no electronic devices are allowed besides the laptop/desktop used for taking the exam. All electronic devices besides the one computer used to take the exam must be turned off and placed out of the reach during the exams.

Final exam is administered only during final exam week and only at the scheduled date/time. The final exam has been pre-scheduled by the university at the start of the semester. The exam date cannot be changed for an individual student.

Once exams begin, students will not be permitted to leave the room until they have turned in the exam (ie. no bathroom breaks or taking phone calls). Leaving the room during the exam will result in a grade of zero for the exam and an academic dishonesty report filed with the department.

Exams may be Oral or Online: Instructor has the discretion to administer exams orally via Zoom or online on Canvas using proctoring tools and webcam to monitor the exam.

For oral exams, students will be given a time slot to meet with the instructor on Zoom to complete the exam. During this one-on-one meeting the student will be given a series of questions to solve. The student may be asked present the answer or the algorithm and show implementation of the algorithm in code. Other questions may include code debugging, filling in blanks in a code segment, short answer or multiple-choice.

Proctored online exams administered on Canvas will use of Respondus LockDown Browser (Respondus LDB) and Monitor which require the use of a built-in webcam and microphone during exams. The Respondus Monitor tool will record your testing experience and environment using a webcam with audio. This may include software applications that use AI, eye-tracking, machine learning, key logging, and other technologies. Students must remain in the testing environment throughout the duration of the test and keep full face, hands, workspace including desk, keyboard, and monitor in full view of the webcam. Instructor may use students' proctored videos for further investigation if cheating is suspected and recordings may become part of the student's administrative disciplinary record. Note that the proctoring software does not determine

whether academic misconduct occurred but does determine whether something irregular occurred that may require further investigation. Students are encouraged to contact the instructor if unexpected interruptions (from a parent or roommate, for example) occur during an exam. Exams will not be accessible using standard web browser like Chrome, Safari, or Firefox. Respondus requires a separate browser (the LDB) that students download to their computer to take the exams. Students must use a laptop or desktop computer with a built-in functional webcam and microphone to run Respondus for the exams. ChromeBook should not be used. For additional details on Respondus, see [Student Quick Start Guide \(PDF\)](#).

Makeup Exams:

No makeup exams will be given. The only exception will be made in the case of a documented and verifiable emergency with a signed doctor's note on the clinic or hospital's letterhead listing the class dates missed. Students must make the request in writing at least three weeks in advance of the exam and discuss extenuating circumstances with the instructor. If approved by the instructor, the student will be allowed to take an oral exam on a date and time selected by the instructor. No makeup exams are given after the last day of instruction.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, student code of conduct, attendance, etc. are available at [SJSU University Policies](#). Download and read the SJSU University policies, paying special attention to Academic Integrity Policy.

Academic Integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy F15-7](#) requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. Academic dishonesty will not be tolerated. Under no circumstances should you pass off someone else's work as your own. Students who are suspected of cheating on an exam, quiz or assignment will be referred to the Student Conduct and Ethical Development office and depending on the severity of the conduct, will receive a zero on the assignment or a grade of F in the course. Grade Forgiveness does not apply to courses for which the original grade was the result of a finding of academic dishonesty.

Copyright and Intellectual Property

- Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without approval. Course material includes lectures, labs, homework assignments, exams, quizzes solutions, and other instructor generated material are copyrighted property of the instructor. You may not publicly share or upload instructor generated material without express written instructor consent. This prohibition includes sharing information with third parties and on websites.
- Students are prohibited from recording class activities (including class lectures, office hours, advising sessions, etc.), distributing class recordings, or posting class recordings. Materials created by the instructor for the course (syllabi, lectures and lecture notes, presentations, labs, assignments, quizzes, exams, solutions, etc.) are copyrighted by the instructor. Students who record, distribute, or post these materials will be referred to the Student Conduct and Ethical Development office. **Unauthorized recording may violate university and state law.**
- You must obtain the instructor's permission to make audio or video recordings in class. Such permission allows the recordings to be used for your private, study purposes only. The recordings

are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.

- No unauthorized sharing or distribution and/or public webposting of any part of the course materials permitted without express written permission from the instructor. Absolutely no part of the course material is permitted for upload to any online site. Students may not post online or email their class programming questions or solutions for any reasons without the express written permission from the instructor.
- No photography, audio or video recording of any part of the class is permitted without express written permission from the instructor.
- Permission from the instructor, whether in writing or orally, may extend to either a single class or the entire semester.
- You may not sell or give transcriptions of lectures or copies of course materials to others without the prior written consent of the instructor.
- In classes where active participation of students or guests may be on the recording, permission of those students or guests must be obtained as well.

Classroom Protocol:

You are already well aware of the ground rules in the traditional, face-to-face classrooms, but there are some guidelines you should be aware of when communicating in an online environment.

- Students are expected to follow [Netiquette](#) guidelines
- Attendance is required. Students are expected to attend all lecture meetings, take notes and are responsible for all material covered in class.
- Short quizzes may be given at any time during class without notice. Only students who participate in lecture will have access to the quiz
- Mute Your Microphone: To help keep background noise to a minimum, make sure you mute your microphone when you are not speaking.
- It is expected that students behave appropriately and be respectful to each other and the instructor. Please refer to [Student Conduct Code](#).
- Student causing disruption to the learning environment will be removed from the Zoom session
- Students may not leave in the middle of the class without notifying the instructor prior to the start of class.
- Inappropriate language during synchronous online meetings or inappropriate postings to discussion board, chat or emails will be reported.
- The dress code for the class is business casual. Students are expected to dress appropriately for the online class meetings.
- Students are required to turn on their cameras and microphones in Zoom when asking questions, during hands-on labs, the entire duration of exams and quizzes. Students may turn off their cameras during lecture.
- If using a virtual background, it should be appropriate and professional and should NOT suggest or include content that is objectively offensive or demeaning.
- Each student is required to know the material covered, engage in class activities, submit assignments on time and take exams and quizzes on time.
- Cell Phones are to be turned off during lectures and tests.

Please acknowledge that these are challenging times for everyone and that we must do our best to support each other. That means providing a positive and productive learning environment. As such, behavior that would not be appropriate in person is not acceptable online.

Tentative Course Schedule

Week	Topics, Assignments
1	Introduction, Course Overview, Expectations
2	Python Development Environment, Conventions and Coding Style Guidelines, First Program, Python as calculator, Debugging, Assignment 1
3	Algorithms, Abstraction, Flowcharts, Variables, Data Types, Assignment 2, Python standard I/O
4	Functions, Arguments, Parameters Writing your own functions. Assignment 3
5	Functions (cont.), Fruitful Functions, Returns, Call stack, Scope, Assignment 4
6	Control Structures – Conditionals, Criteria, Assignment 5
7	Control Structures – Repetition, Tracing/State Diagram, Assignment 6
7	Strings, Text manipulation. Assignment 7
8	More Control Structures – Iteration, Assignment 8
9	Midterm Exam
10	Data Structures: Lists, Assignment 9
11	Data Structures: Multi-Dimensional Lists, Assignment 10
12	Dictionaries, Assignment 11
13	File I/O, Assignment 12
14	Random number generation, Assignment 13
15	Search Algorithms, Assignment 14
16	Sorting Algorithms, Assignment 15
17	Creating graphics and Game Design (Time permitting)
Final Exam	Cumulative Final, Friday, December 11 1445-1700 *See SJSU Final Exam Schedule Fall 2020

Note that the course schedule and dates are tentative and subject to change at the discretion of the instructor. The instructor reserves the right to modify as needed. Unanticipated circumstances, including discovery of the need to spend more time mastering particular content may require changes to the syllabus. In such situations, instructor will notify students. Any changes will be announced in due time in class and on the course page. The syllabus is subject to change without notice. Students are encouraged to check Canvas regularly for updates.

Tips for Success:

- Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of three hours per unit per week over the length of the course for instruction, preparation, studying, or course related activities, including but not limited to reading, programming assignments and exams.
- Attend class, it is required, and take notes. Study after study after study has shown that students who take notes during lecture are far more successful than those who browse the web during class, or worse, talk to friends.

- Although this class is designed for novice programmers, to complete the required work online, students need a laptop/desktop with internet connection and basic computer and internet skills (word processing, e-mail, browsers, file management/upload)
- Complete the reading and assignments on time -- make an effort to visit the course page and complete activities regularly. Block out time in your schedule to do the work.
- Attend office hours and ask for help when you need it
- If this is your first online learning experience, expect to invest extra time to orient yourself to the course design and tools.
- Have patience and a sense of humor with technology and programming.
- Keep an open mind
- Read this syllabus, and any other course material, carefully and ask for clarification when needed.
- You spent a lot of money to take this class and are investing a lot of time. You owe it to yourself to give it your best effort.

Agreement of Terms

Read this syllabus carefully. By enrolling in this course, you agree to all the terms and conditions laid out in this syllabus including the Honesty Pledge and uphold the standards outlined in the [University policies regarding cheating and academic dishonesty](#). It is the student's responsibility to read the course syllabus and to request any clarification of course policies. If you disagree with any of the provisions, it could be in your best interest to take the course with another instructor.

Honesty Pledge:

- I have read and understand the university's definition of cheating and plagiarism.
- I will not copy someone else's work ("cut and paste") in whole or part, or paraphrase (rewrite without changing the essential meaning) any material from any source.
- I will not discuss any assignment that is part of the course grade with anybody without prior approval from the instructor.
- I will not submit work presented in another course or work previously graded in another course
- I will not use or consult sources, tools or materials prohibited by the instructor for assignments or exams.
- I will not have my exams taken by a surrogate
- I understand that there is no make-up opportunity for assignments, quizzes or exams where breaches of academic integrity have occurred.
- I understand that breaches of academic integrity will result in the reporting of the incident to the university administration resulting in academic sanctions, as well as possible administrative sanctions.