Computer Science Department
CS 22A: Python Programming for Non-Majors I
Spring 2021

Course and Contact Information

Course Number: 24902
Course Dates: January 28, 2021 to May 17, 2021
Class Days: Tuesdays & Thursdays
Class Meeting Time: 3:00 - 4:15 pm (Synchronous Virtual Meetings)
Instructor: Nadine Ferguson
Contact Information: nadine.ferguson@sjsu.edu
Office Hours: Virtual Office Hours on Mondays 2:00 – 3:00 pm
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 Leaning 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):

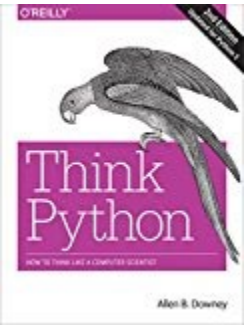
Upon successful completion of this course, students will be able to:

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 is necessary to adequately engage with the components of this course and complete the programming tasks, quizzes and exams (Chromebook or tablet is not adequate). It should be a fairly recent Mac or PC (not more than three years old) with a current OS. Contact SJSU Library or IT for a loaner laptop
- Current browser
- Reliable and stable internet connection/Wi-Fi access (Contact SJSU library or IT for loaner hotspot)
- Zoom web conferencing for synchronous class meetings and assignments.
- Microsoft Word
- Proctoring software for exams and quizzes.

Other Requirements:

- Valid and current SJSU student photo ID for Spring 2021 semester

Grading

Evaluation of student work includes quality and originality of their programming assignments, correct use of programming conventions and syntax incorporating concepts covered in the course and problem-solving skills. Quizzes and Exams are evaluated based on demonstrated comprehension and application of material. Quality of participation in class discussions is also a part of the total grade. Plagiarized work will not receive any credit and may result in an F for the final grade in the course.

Final grade is calculated based on the percentage of the total points for all the Course Requirements and Assignments (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 preparation, studying, or course related activities, including but not limited to reading and assignments.

Programming Assignments	5-20 points each
Pop Quizzes	10 points each
Midterm Exam	50 points
Final Exam (Cumulative)	50 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. Up to two programming assignments will be assigned each week. Students are expected to submit their completed work to Canvas for grading. Programming assignments are not group projects; they are for individual work only which means that there should be no sharing of code or answers. Students may not use code or solutions from any online source. ***Programming assignments should be completed using only the constructs and concepts covered in class.***

Each assignment submission will be checked for similarity. You must write the code for your solutions on your own. ***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. ***Sharing code or answers as well as looking at another student's code is considered plagiarism.*** Plagiarism is the act of using someone else's words or programming code and claiming them as your own. The work that you turn in must be original and every single byte of the solution must come from you.

Any student who is found academically dishonest 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 (Cheating and Plagiarism) under Policies.

Finding and sharing solutions to assignments online is considered academic dishonesty. Students are expected to submit their own work, not the work of someone else. Students are required to explain and demonstrate their algorithms and code implementation for the assignments.

Assignment Submission Requirements:
The following parts must be submitted to Canvas for each Programming Assignment:

i. Working Python program file (.py) including comments throughout the code. IDLE is required for all program development and testing for CS22A assignments.
ii. Required Assignment Document. This is a documentation file (.docx or .pdf) showing the source code for the solution (pasted from the IDE), your algorithm and program output screenshot(s) of testing the program. A Required Assignment template is provided on the course page.
iii. Link to your Zoom recoding of how you came up with the solution and how you implemented the solution in Python. The link should be included in your .docx file. The recoding shows your process and strategy for solving the problems assigned including

explanation of your algorithm, and implementation details as you demonstrate the programming skills you have learned. Students are required to talk through their algorithms in the recording and explain the code as they write each step of the program development. (See Assignment Submission Criteria document for details of creating your Zoom recoding).

Assignment submitted without the above three parts will not receive a grade. 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.

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.

File-naming convention outlined in the Required Assignment Document must be followed for both files. Files must be submitted to the assignment submission page on Canvas, not attached to the comments section of the assignment. Attached files will not be graded.

No late or emailed assignments are accepted for any reason. No make-up or extra credit assignments will be given. However, everyone gets one free 'late pass' for the semester. No submissions will be accepted after the last day of instruction. It is the student's responsibility to keep current on all due dates.

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.

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. If proctoring software is used for quizzes, students are required to provide an environment check including a complete desk scan. No extra credit quizzes will be available.

Exams: There will be two exams: a midterm and a final exam. The final exam is cumulative. Exams have fixed dates and can only be taken during the set date/time. There are no are make-up exams for any reason. Dates for the exams will be posted on Canvas. Final exam must be administered only during final exam week and only at the scheduled date/time. Exam dates cannot be changed for individual students.

Exams may be proctored online using third party software or administered orally. For oral exams, students will be given a time and date for a Zoom meeting with the instructor to complete the exam. Online proctored exams require using a proctoring software that records the student's test session and environment using a webcam and microphone. Students are required to provide an

environment check including a complete desk scan. Instructor has the discretion to administer exams orally via Zoom or online on Canvas using proctoring tools and webcam to monitor the exam. No makeup exams will be given for any reason.

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. 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. 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 form the instructor.

No photography, audio or video recording of any part of the class is permitted without express written permission from the instructor.

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. ***Behavior that would not be appropriate in person is not acceptable online.***

- 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 class.
- Students may not leave in the middle of the class without notifying the instructor prior to the start of class.
- Inappropriate language during class meetings or inappropriate postings to discussion board, chat or emails will be reported and the student will be removed from the class.
- The dress code for the class is business casual. Students are expected to dress appropriately for the online class meetings.
- Students are expected to address the instructor as "Professor Ferguson". Not as "Hey" or by first name.
- Students are required to turn on their cameras and microphones in Zoom when asking questions, during class, the entire duration of exams and quizzes.
- 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.

If you ever feel that someone is not following these rules, please send me an email and describe your concerns.

Time Zone:

Please note the time zone for Zoom meetings/Office hours and the due dates for, discussions, assignments, quizzes and exams are based on the instructor's time zone (PST), not the student's.

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

Week	Topics, Assignments
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, Monday, May 24, 2021 2:45 pm- 5:00pm *See SJSU Final Exam Schedule Spring 2021

*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. Students may be notified of changes during class or via email message and/or Canvas announcement. The final exam date is firm and cannot be changed. Any changes will be announced in due time in class and on the course's web site. The students are obliged to consult the most updated and detailed version of the reading material and syllabus, which will be posted on the course's web site.

**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 preparation, studying, or course related activities, including but not limited to reading, programming assignments and exams.
- Attend class 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 reliable 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.
- Get started on the programming assignments as soon as they are posted – they are time intensive!
- 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.
- Keep an open mind. Have patience and a sense of humor with technology and programming.
- Read this syllabus, and any other course material, carefully and ask for clarification if 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

By enrolling in this course, you agree to the course policies and terms laid out in this syllabus including the Honesty Pledge. You also agree to uphold the standards of academic integrity 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. You are required to submit your agreement to this syllabus via a digital signature. Students are required to complete the syllabus agreement on Canvas as part of the Syllabus Quiz on the first week of class. ***Agreement to the syllabus is required before any student work can be graded or access to course content is provided***.

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.