San José State University
College of Science/Computer Science
CS 122, Advanced Python, Section 3, Spring 2026

Course and Contact Information

Instructor(s):	Jennifer M. Chun
Office Location:	Duncan Hall 212
Telephone:	N/A
Email:	jennifer.chun@sjsu.edu
Office Hours:	In-person: Monday/Wednesday, 11:00 AM - 11:45 AM Additional scheduled office hours upon email request to instructor
Class Days/Time:	Monday/Wednesday, 12:00 PM - 1:15 PM
Classroom:	Duncan Hall 243
Prerequisites:	CS 146 (with a grade of "C-" or better)

Course Description

Advanced features of the Python programming language with emphasis on programming practice. Course involves substantial programming projects in Python. Computer Science, Data Science, Computer Science and Linguistics, Applied and Computational Math, or Software Engineering majors only.

Course Format

Technology Intensive

Class time will be spent either in “lecture” mode or in “lab” mode. Students are required to bring their wireless laptops to each class.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be familiar with the following concepts and will be able to apply them in appropriate situations:

1. Design, implement and test readable, efficient programs that utilize Python built-in capabilities and follow Python best practices.
2. Understand implementation differences and performance tradeoffs associated with various Python data structures.
3. Manipulate and analyze large datasets and handle missing or inconsistent values.
4. Design and implement Python programs for data analysis and visualization, web development, and database interactions.

Required Texts/Readings

Textbook

The following textbooks will be made available in the course Canvas shell:

- The Quick Python Book (Third Edition) by Naomi Ceder ISBN: 9781617294037
- Biological data exploration with Python, pandas, and Seaborn by Martin Jones, 2020. ISBN-13: 9798612757238

Other Readings

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

Python Programming Environment

- Python 3.7 or above available at https://www.python.org/downloads/.
- Jupyter Notebook and Google Colab
- Programming IDE of your choice, such as PyCharm Community Edition.

Course Requirements and Assignments

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities.

There are no extra credit assignment opportunities in this class.

Quizzes (10%): Quizzes will take place in class only to assess students' knowledge of the course materials from the week before. A unique password will be provided for each quiz during the lecture. No make-up quizzes will be given. The two lowest scoring quizzes will be dropped at the end of the semester.

Homework Assignments (20%): Hands-on assignments will be posted and must be submitted on Canvas by 11:59 PM of the submission date. All assignments must be submitted by the posted due date to receive full credit. To encourage proper understanding of the course topics, all submitted individual assignments must be the student's own. Students may not share or copy code from fellow students or from the web/ChatGPT/etc. Infractions will be detected and will lead to an automatic failing grade for the course. Copying of student work, with or without permission, will lead to penalties for students involved.

Midterms (MT) (30%):

- MT1 (15%): March 11, 2026 (Wednesday)
- MT2 (15%): April 20, 2026 (Monday)

Midterms are written tests to evaluate general understanding of the previously taught concepts. No make-up exams will be given if a student misses the midterm exam submission deadline (unless you have a legitimate

excuse or other personal emergencies and can provide documented evidence). Students will be required to provide their student ID on the test dates.

Term Project & Presentation (20%): The final project is a group project. Each group consists of 2 to 3 students. Here are the key deliverables and due dates:

- Team Formation: February 23, 2026 (Monday)
- Project Proposal: March 4, 2026 (Wednesday)
- Deliverables and Timeline: March 16, 2026 (Monday)
- Progress Report: April 6, 2026 (Monday)
- Final Project Due: May 6, 2026 (Wednesday)
- Presentation: Each group gives a 10-minute, in-class presentation on May 6, 2026 (Wednesday) or May 11, 2026 (Monday), during class time.

Final Exam (20%): Final Exam is on Monday, May 18, 2026, 10:45 AM-12:45 PM. It is a comprehensive test, including topics covered at the beginning and throughput the course. One cheat sheet, both sides used, is permitted during the written final exam. Students will be required to show their student ID before taking the final exam.

Grading Information

Grading calculation will be based on the following:

- 10% Quizzes
- 20% Hands-on Assignments
- 30% Midterm I (15%) & Midterm II (15%)
- 20% Term Project
- 20% Final Exam

Incomplete work: Points will be deducted for incomplete question responses and solutions that are partially functional. Consult individual assignment for details of point allocation for each problem.

Late Policy – Homework Assignments ONLY: Life happens - You can submit two homework assignments late, no explanation why necessary. Please just add in the comment box of your submission "USING LATE PASS". Late Passes: You can submit the assignment up to 3 days after the deadline.

Makeup Exams: You must submit only your own work for exams. Makeup exams will only be given in cases of illness (documented by a doctor) or in cases of documentable, extreme emergency.

Grade	*Percentage*
A plus	*97 to 100%*
A	*93 to 96.99%*
A minus	*90 to 92.99%*
B plus	*86 to 89.99 %*
B	*83 to 85.99%*
B minus	*80 to 82.99%*

Grade	*Percentage*
C plus	*76 to 79.99%*
C	*73 to 75.99%*
C minus	*70 to 72.99%*
D plus	*66 to 69.99%*
D	*63 to 65.99%*
D minus	*60 to 62.99%*
F	*<60.00%*

University Policies

Per University Policy S16-9 *(http://www.sjsu.edu/senate/docs/S16-9.pdf)*, relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on Syllabus Information web page (http://www.sjsu.edu/gup/syllabusinfo), which is hosted by the Office of Undergraduate Education. Make sure to visit this page to review and be aware of these university policies and resources.

Accessible Education Center

Students with disabilities must contact the instructor via email (jennifer.chun@sjsu.edu) and/or office hours to discuss all necessary learning accommodations before submitting requests to the Accessible Education Center.

CS 122 Section 3 Spring 2026 Course Schedule

Course Schedule

Readings (QP - The Quick Python Book, BD - Biological data exploration with Python, pandas and seaborn)

Date	Week	Lesson	Readings	Topics
1/26/26	1	1	Ch1 QP	Introduction, Course Logistics, & Installation
1/28/26	1	2	Ch4 & 6 QP	Python Basics and Strings
2/2/26	2	3	Ch5 & 7 QP	Lists, Tuples, Sets & Dictionaries
2/4/26	2	4	Ch8 QP	Control flow and Comprehensions
2/9/26	3	5	Ch9 QP	Basic Functions, Lambda, Generator Functions, and Decorators
2/11/26	3	6	Ch16 QP	Regular Expressions
2/16/26	4	7	Ch13 & 14 QP	Working with Files and Exception Handling
2/18/26	4	8	Ch15 QP	Object-Oriented Programming Part 1
2/23/26	5	9	Ch15 QP	Object-Oriented Programming Part 2
2/25/26	5	10	Ch2 & 3 BD	Intro to Pandas, Series, and Dataframe Objects
3/2/26	6	11	Ch4 & 5 BD	Data Exploration Using Pandas
3/4/26	6	12	Ch12-16 BD	Reshaping, Grouping and Categorizing Data in Pandas
3/9/26	7	13	Ch6 BD	Intro to Seaborn for Data Visualization & Exam 1 Review
3/11/26	7			**Term Exam #1**
3/16/26	8	14		Working with Relationship Database
3/18/26	8	15		Web Development with Flask Part 1
3/23/26	9	16		Web Development with Flask Part 2
3/25/26	9			Exam 1 answered
3/30/26	10			Spring Recess - no classes
4/1/26	10			Spring Recess - no classes
4/6/26	11	17		Writing Unit Tests
4/8/26	11	18		Deploying Web App to the Cloud Part 1
4/13/26	12	19		Deploying Web App to the Cloud Part 2
4/15/26	12	20		Making Database Handling Easier with an Object-Relational Mapping (ORM) & Exam 2 Review
4/20/26	13			**Term Exam #2**

Date	Week	Lesson	Readings	Topics
4/22/26	13	21		Creating GUI Application using Python-Tkinter
4/27/26	14	22		Distributing Python Applications
4/29/26	14			Exam 2 answered
5/4/26	15			Final Exam Review
5/6/26	15			**Final Project due. 10 min Project presentations.**
5/11/26	16			**10 min Project presentations / Final Exam Questions**
5/18/26	17			**Final Exam, 10:45 AM-12:45 PM, Duncan Hall 243**
5/22/26	17			**Grades Due**