SJSU SAN JOSÉ STATE UNIVERSITY

College of Science · Computer Science

Python for Everyone

CS 22A

Spring 2026 Section 01 In Person 3 Unit(s) 01/22/2026 to 05/11/2026 Modified 01/23/2026

Contact Information

Instructor: Dr. Wendy Lee (wendy.lee@sjsu.edu)

TA: Alan Xu (alan.xu@sjsu.edu)

Class Schedule

- M/W 9 am -10:15 am in MH 225

Instructor's Office Hours

- Wednesday 1:30 - 2:30 PM (MH 413) & Thursday 10:00 - 11:00 AM (Zoom)
- Schedule appointment @ https://www.sjsu.edu/people/wendy.lee/

TA Tutoring Sessions

- Schedule an appointment through Spartan Connect Student Home page (https://sjsu.campus.eab.com/) (https://sjsu.campus.eab.com (https://sjsu.campus.eab.com/))

Course Information

This introductory course teaches students how to use **Python programming** and **statistical methods** for data analysis. This course is conducted in person. You'll learn the fundamentals of Python, including data types, control flow, functions, and libraries essential for data science, like **NumPy** and **Pandas**. The curriculum also covers key statistical concepts, such as sampling distribution and hypothesis testing, and shows you how to apply them to real-world datasets. By the end of the course, you'll be able to use computational tools to explore, visualize, and interpret data, giving you the analytical skills needed for a variety of fields.

Course Description and Requisites

Introduction to Python programming in interesting, relevant, and practical contexts. Programming skills are developed to solve problems in such fields as life sciences, mathematics, and business. Fundamental programming constructs: data structures and algorithms, iterations, and functions. Course is intended for students who have no prior programming experience.

Satisfies 2. Mathematical Concepts and Quantitative Reasoning (Formerly Area B4).

Corequisite(s): CS 1022AS is required for Math Enrollment Category M-III and M-IV.
Grading: Letter Graded

Classroom Protocols

Students are expected to adhere to the Student Conduct Code found at the SJSU Student Conduct website (http://www.sjsu.edu/studentconduct/) (http://www.sjsu.edu/studentconduct/). Additionally, students should regularly attend lectures and labs (if applicable), treat instructors and peers with respect.

- **Dual Role of MH 225**: Lecture/Lab MacQuarrie Hall MH 225 will be used as a dual-purpose room. It can be a regular lecture room, or it can be a computer laboratory for hands-on exercises.
- **Lecture Mode:** This is when MH 225 is used as a regular lecture room. Students are expected to listen and follow the lecture. Be considerate of your classmates and follow the lecture.
- **Lab Mode:** This is when MH 225 is used as a computer lab. Use your laptop computer. Work collaboratively on problems of the Hands-On and share your ideas and solutions with your classmates.
- We shall alternate between the two modes. A typical class will begin with a lecture (Lecture Mode) followed by a hands-on (Lab Mode).
- Please arrive at class on time so that you benefit fully from the course experience, and you do not disturb classmates and the instructor while class is in session.
- Students are responsible for knowing all materials covered in class lectures, readings, assignments, and other course-related work.
- Laptops, tablets, and other devices should only be used for course-related purposes.

Program Information

Welcome to this General Education course.

SJSU's General Education Program establishes a strong foundation of versatile skills, fosters curiosity about the world, promotes ethical judgment, and prepares students to engage and contribute responsibly and cooperatively in a multicultural, information-rich society. General education classes integrate areas of study and encourage progressively more complex and creative analysis, expression, and problem solving.

The General Education Program has three goals:

Goal 1: To develop students' core competencies for academic, personal, creative, and professional pursuits.
Goal 2: To enact the university's commitment to diversity, inclusion, and justice by ensuring that students have the knowledge and skills to serve and contribute to the well-being of local and global communities and the environment.
Goal 3: To offer students integrated, multidisciplinary, and innovative study in which they pose challenging questions, address complex issues, and develop cooperative and creative responses.

More information about the General Education Program Learning Outcomes (PLOs) can be found on the GE website (https://sjsu.edu/general-education/ge-requirements/overview/learning-outcomes.php).

Course Learning Outcomes (CLOs)

GE Area 2: Mathematical Concepts and Quantitative Reasoning

Mathematical Concepts and Quantitative Reasoning courses enable students to use numerical and graphical data in personal and professional judgments and in understanding and evaluating public issues. Completion of Area 2 with a grade of C- or better is a CSU graduation requirement.

Area 2 courses help students understand information requiring quantitative analysis and how to use and analyze quantitative arguments. Completion of Area 2 with a minimum grade of C- is a CSU graduation requirement.

GE Area 2 Learning Outcomes

Upon successful completion of an Area 2 course, students should be able to:

1. use mathematical methods to solve quantitative problems, including those presented in verbal form;
2. interpret and communicate quantitative information using language appropriate to the context and intended audience;
3. reason, model, draw conclusions, and make decisions based on numerical and graphical data; and
4. apply mathematical or quantitative reasoning concepts to solve real life problems.

Writing requirement

The minimum writing requirement for Area 2 courses is 500 words in a language and style appropriate to the discipline.

Course Materials

1. Click on the Zybook HW 1 assignment link under Python Programming Exercises in Canvas.
(DO NOT go to the zyBooks website and create a new account)
2. Subscribe.

Course Requirements and Assignments

The course will consist of pre-class video lectures, in-class lectures, Python programming exercises, hands-on exercises, homework, one midterm exam, and a final exam. All midterm and final exams are conducted in person.

Pre-class video lectures: Students must watch the assigned pre-class video lectures and complete the quizzes within the videos.

In-class hands-on exercises: After each lecture, students may require to complete an in-class hands-on exercise during class, and it must be turned in through Canvas individually.

Homework: All homework will be completed online. The homework will reinforce and deepen the understanding of the content discussed in lecture, and also serve as preparation for the in-class midterm exams. No late assignments will be accepted. However, under exceptional circumstances, one problem set per student might be accepted late. It will need to be handed in before the following class meeting and will be graded with 30% off. Such an extension should be requested from the instructor.

Python programming exercises: Python programming exercises are assigned through Zybook. All students must have a valid Zybook subscription.

Quizzes: Quizzes will be given during class to assess your understanding of the course materials.

Team Project: There will be a programming group project. Each group consists of two students. Information on the term project, including topics and deadlines, will be given later. The term project is due on the 15th week of the semester. Each group will give a 10-minute, in-class presentation (5 minutes per student), during class time.

Midterm Exam: There will be two in-class midterm exams. The midterms will be held on March 18th and April 15th of the semester. Success on the midterm exams will indicate a mastery of the associated materials. *No make-up exams will be given unless proper documentation of an emergency is provided.*

Final Examination: There will be a comprehensive, in-person, final exam on May 15th, 2026, 8:30-10:30 AM.

✔ Grading Information

- Pre-class Video Lessons (5%)
- Python Programming Practice (15%)
- In-class Hands-on Exercises & Homework (10%)
- Quizzes (15%)
- Team Project (15%)
- Midterm Exams (20%)
- Final Exam (20%)

Grade Scale:

Grade	Points

A plus	*100 - 97.0*
A	*96.9 - 93*
A minus	*92.9 - 90.0*
B plus	*89.9 - 87.0*
B	*86.9 - 82.0*
B minus	*81.9 - 80.0*
C plus	*79.9 - 77.0*
C	*76.9 - 72.0*
C minus	*71.9 - 70.0*
D plus	*69.9 - 67.0*
D	*66.9 - 62.0*
D minus	*61.9 - 60.0*
F	*59.9 - lower*

University Policies

Per University Policy S16-9 (PDF) (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 the Syllabus Information (https://www.sjsu.edu/curriculum/courses/syllabus-info.php) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Week	Date	Topics
0	1/26, 1/28	Syllabus, Course Expectations, Introduction to Google Colab Introduction to Python Programming

1	2/2, 2/4	Variable assignment, String, and other data types
2	2/9, 2/11	Introduction to Pandas Dataframe and Series Introduction to Statistical Research Process
3	2/16, 2/18	Loops and range Conditional Statement
4	2/23, 2/25	Central Tendency Measures of Variability
5	3/2, 3/4	Normal Distribution Standardized Scores
6	3/9, 3/11	Sampling Distribution Standard Error
7	3/16, 3/18	Midterm Review **Midterm Exam 1**
8	3/23, 3/25	Estimation (Confidence Intervals) Margin of Error
9	3/30, 4/1	**Spring Break - No Class**
10	4/6, 4/8	Hypothesis Testing t-Tests to Compare Means
11	4/13, 4/15	Midterm Review **Midterm Exam 2**
12	4/20, 4/22	Independent and Dependent t-Tests

13	4/27, 4/29	Correlation & Regression
14	5/4, 5/6	Project Presentations
15	5/11	Final Exam Review
16	5/15	**FINAL EXAM** (8:30 - 10:30 AM in MH 225)