

CSE20 Beginning Programming in Python

Larissa Munishkina
Summer 2023

COURSE INFORMATION

Welcome to Beginning Programming in Python!

In this class you will learn how to write your first programs in Python, one of the most popular programming languages, use standard Python libraries (including math, regular expressions, turtle graphics, etc.), remotely connect to a server using SSH and SFTP, and eventually become a junior programmer, who will be ready to continue his or her journey in the wonderful land of Coding and Scripting.

Please, check the class [Syllabus](#) page on Canvas for more information on the class policies, grading, DRC services, and the instructor's, teaching assistants' and tutors' contacts.

Thank you for joining the class! I hope you will have a wonderful coding adventure with us! Good luck!

Important Information

This is an in-person class. Lectures, office hours, and discussion sections will be on YuJa and Canvas. Quizzes, labs, and programming assignments will be submitted on Canvas. You will be provided with detailed instructions on how to do it.

If you encounter problems, let us know: post your question on Canvas and Ed, attend discussion sections, or contact the teaching assistants or instructor.

The class schedule can be found here: [Class Schedule.pdf](#)

All zoom lectures can be found in the Assignments folder under the name Video Lectures. You can watch them as many times as you like, and you can take them for credit.

INSTRUCTOR INFORMATION

Instructor: Larissa (Lara) Munishkina (mlarissa@ucsc.edu)

Office Hours: WF 4:00 pm - 5:00 pm
<https://ucsc.zoom.us/j/3928413932>
passcode: python

Lectures: MWF 09:30 am - 10:50 am
Merrill Acad 102

Course Name	Days/Times	Location
CSE20-01	Summer 2023	Merrill Acad 102

LEARNING OUTCOMES

In this class, you will learn how to install Python 3 and write and run Python scripts using Python IDLE (pronounced **AIDL**) and other IDEs **on your own computer**. You will also learn how to transfer your Python source files to a UCSC server using SFTP and run a bash shell and Python scripts on the server using SSH. You can check the [Files](#) folder on Canvas and read instructions on how to install Python 3, to use IDLE, and to connect to the UCSC UNIX timeshare using SSH and SFTP.

CSE20 class will prepare you for CSE30 class, Programming Abstractions in Python. In CSE20, you will learn basic data types, data collections, classes, exceptions, files, and control flow structures.

PREREQUISITES/COREQUISITES

There are no prerequisites for CSE20 class. However, the common knowledge of computer and software is necessary – you should be able to use a computer; log into a computer account; connect to the Internet; use a browser to navigate on the Internet; create, copy, delete, and rename files; use email, Canvas, Ed; watch videos; navigate your computer using file managers; edit text files, and create and open image files (make screenshots).

REQUIRED MATERIALS, TEXTBOOKS AND TECHNOLOGY

Main textbook:

Introduction to Python Programming 1st Edition by Gowrishankar S and Veena A downloadable through UCSC Library as a full text book <https://library.ucsc.edu/>. You can download it from Files/MainTextbook.pdf

Optional Books:

1. Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming
2. Learning Python, 5th Edition
3. Automate the Boring Stuff with Python, 2nd Edition: Practical Programming for Total Beginners
4. Python for Everybody: Exploring Data in Python 3
5. Wiki Python Programming

Main Online Resources:

1. Canvas webpage: <https://canvas.ucsc.edu/courses>

2. SOE webpage: <https://courses.soe.ucsc.edu/courses/cse20>
3. UCSC Unix timeshare:
yourCruzID@unix.ucsc.edu
4. <https://its.ucsc.edu/unix-timeshare/index.html>

Additional Online
Resources:

1. Welcome To Colaboratory - Colaboratory (google.com)
2. <https://www.w3schools.com/python>
3. <https://www.learnpython.org>
4. <https://docs.python.org/3/tutorial>
5. <https://docs.python.org>
6. <http://www.ee.surrey.ac.uk/Teaching/Unix>
7. <https://its.ucsc.edu/unix-timeshare/tutorials/index.html>

COMMUNICATION

Instructor Contact: mlarissa@ucsc.edu

Teaching Assistants: TBA

Tutors: TBA

MSI Tutors: TBA

You can contact the instructor and teaching assistants anytime by UCSC email. If you have general questions, please post them on Canvas or Ed.

ASSIGNMENTS & ASSESSMENT

Course Work. This course is a programming course. You will have five programming assignments, ten lab assignments, five quizzes, and the final exam. The final grade will be calculated according to the following schema:

Programming Assignments	20
Lab Assignments	30
Quizzes	30
Final Exam	15

Class Participation. Participation includes participation in lectures and Canvas posting (discussions). Please note that you will receive points for lecture and discussion assignments. If you cannot attend a lecture, you can watch a corresponding lecture video in the Assignment folder under the name [Video Lectures](#). You have to submit the assignment to get credit for the lecture attendance (if you attend the lecture, you still need to submit the assignment, but you do not have to watch the video).

Quizzes. There will be five quizzes; however, one quiz with the lowest score will be dropped from the final grade calculation. Quizzes will be administered almost every Wednesday and should take around 30-40 minutes to complete.

Final Exam. There will be a final exam (TBA). If you are ill or have an unexpected family emergency, you must notify the instructor as soon as possible and before the examination day. Otherwise, you may have a zero grade on your exam.

Programming Assignments. All five programming assignments must be done individually and have to be submitted on time on Canvas. All assignments will be graded according to the grading rubrics published under each assignment folder.

You can consult the instructor, teaching assistants, tutors, or students about general approaches of the program, its syntax, and debugging the code. However, do not copy other's code or share your own code with other students or post the code on the Internet. If the same or very similar programming codes are found between students, the students will receive a lower or a zero score for the assignment. Administrative actions may also be taken with the university. Please read about the Academic Integrity Policy written below.

Labs. You will have ten lab assignments. Lab assignments are different from programming assignments! The main purposes of lab assignments are to learn Python libraries and packages and to prepare you for quizzes and programming assignments. They will include the following topics: setting up your work environment, installing IDLE, using sftp and ssh, practicing with Python built-in standard packages including random, math, datetime, re (regular expressions), and internal and external libraries such as Turtle, Tkinter, Matplotlib, NumPy and others. Lab assignments should be completed and submitted on Canvas. Lab assignments can be done with the help of tutors, teaching assistants, or in collaboration with other students.

GRADING POLICY

All assignments will be graded according to the grading rubrics published under each assignment folder. Please notice that late assignments have a penalty of 5% per day.

STUDENT HOURS FOR CLASS

CSE20 is a 5-unit course that may require 15 hours per week of work: 3 hours of lecture, 2 hours of reading, 1 hour of section, and 9 hours of homework per week.

INSTRUCTOR FEEDBACK.

I will provide direct comments and feedback on your assignments. [Please click here to learn how to access my comments in Canvas.](#) For major assignments, I will include a grading rubric that will be available to you prior to submitting your work. [Please click here to learn how to access grading rubrics for assignments.](#)

STUDENT FEEDBACK

At the end of the quarter you will be asked to complete a Student Experience of Teaching survey for this course. SETs provide an opportunity for you to give valuable feedback on your learning that is honest and constructive. This anonymous feedback will help me consider modifications to the course that will help future students learn more effectively.

COURSE SCHEDULE

	Date	Lecture	Reading	Assignment
1	Lecture 1	Week 1	Syllabus, class schedule, requirements	LAB 1 A & B posted
2	Lecture 2	Week 1	Python 3 IDLE installation, sftp and ssh, UCSC Unix server	PA 1 posted
3	Lecture 3	Week 1	Intro to Python language, programming, machine code, etc. Identifiers, variables, operators	Ch. 1.1 - 1.5, 1.10 -1.11, 2.8 - 2.9 Ch. 2.1 - 2.6
4	Lecture 4	Week 2	Data types, casting, input, output, formatting	Ch. 2.7 - 2.15 LAB 1 A & B due / LAB 2 & LAB 3 posted
5	Lecture 5	Week 2	Control flow: if, if-else, elif statements	Ch. 3.1 - 3.4 PA1 due/PA 2 posted
6	Lecture 6	Week 2	Overview: input/output, identifiers, operators, data types	Quiz 1
7	Lecture 7	Week 3	Control Flow: for loops	Ch. 3.5 - 3.7, 3.9 LAB 2 and LAB 3 due / LAB 4 posted

8	Lecture 8	Week 3	Functions	Ch. 4.1 – 4.10	PA2 due/PA 3 posted
9	Lecture 9	Week 3	Overview: Loops and Conditional Statements		Quiz 2
10	Lecture 10	Week 4	Strings	Ch. 5.1 – 5.7	LAB 4 due / LAB 5 posted
11	Lecture 11	Week 4	Regular Expressions (RE)	Ch. 10.1 – 10.5	
12	Lecture 12	Week 4	Overview: functions and strings		Quiz 3
13	Lecture 13	Week 5	List	Ch. 6.1 – 6.7	LAB 5 due / LAB 6 posted
14	Lecture 14	Week 5	Dictionary	Ch. 7.1 – 7.6	PA3 due/PA 4 posted
15	Lecture 15	Week 5	Tuple and Array	Ch. 8.1 – 8.12	
16	Lecture 16	Week 6	Set and Frozenset	Ch. 8.1 – 8.12	LAB 6 due / LAB 7 & LAB 8 posted
17	Lecture 17	Week 6	Exceptions	Ch. 3.8	
18	Lecture 18	Week 6	Overview: Data Collections		Quiz 4
19	Lecture 19	Week 7	Files	Ch. 9.1 – 9.8	LAB 7 & LAB 8 due / LAB 9 posted
20	Lecture 20	Week 7	OOP: Classes and Objects	Ch. 11.1 – 11.4	PA4 due/PA 5 posted
21	Lecture 21	Week 7	Overview: Exceptions, Files, and Classes		Quiz 5
22	Lecture 22	Week 8	Class Methods	Ch.11.5 – 11.7	LAB 9 due / LAB 10 posted
23	Lecture 23	Week 8	Inheritance and Polymorphism	Ch. 11.8 Ch. 11.9 – 11.10	PA 5 due LAB 10 due Canvas is closed for any submissions except the final
24	Lecture 24	Week 8	9:00 am – 11:00 am	final exam	FINAL EXAM DUE



FINAL EXAM DATE AND TIME

The final exam will be administered on Canvas and proctored on Zoom. You will be provided with detailed instructions how to complete and submit your exam.

ACADEMIC INTEGRITY

All members of the UCSC community benefit from an environment of trust, honesty, fairness, respect, and responsibility. You are expected to present your own work and acknowledge the work of others in order to preserve the integrity of scholarship.

Academic integrity includes:

- Following exam rules
- Using only permitted materials during an exam
- Viewing exam materials only when permitted by your instructor
- Keeping what you know about an exam to yourself
- Incorporating proper citation of all sources of information
- Submitting your own original work

Academic misconduct includes, but is not limited to, the following:

- Disclosing exam content during or after you have taken an exam
- Accessing exam materials without permission
- Copying/purchasing any material from another student, or from another source, that is submitted for grading as your own
- Plagiarism, including use of Internet material without proper citation
- Using cell phones or other electronics to obtain outside information during an exam without explicit permission from the instructor
- Submitting your own work in one class that was completed for another class (self-plagiarism) without prior permission from the instructor.
- Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript. For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the [Academic Misconduct page](#) at the [Division of Undergraduate Education](#).

ACCESSIBILITY

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by email, preferably within the first two weeks of the quarter. At this time, I would like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact the DRC by phone at 831-459-2089 or by email at drc@ucsc.edu.

You can find further examples of accessibility and inclusivity statements in [CITL's Sample Syllabus Language](#).

INTELLECTUAL PROPERTY

The materials in this course are the intellectual property of their creators. As a student, you have access to many of the materials in the course for the purpose of learning, engaging with your peers in the course, completing assignments, and so on. You have a moral and legal obligation to respect the rights of others by only using course materials for purposes associated with the course. For instance, you are not permitted to share, upload, stream, sell, republish, share the login information for, or otherwise disseminate any of the course materials, such as: video and audio files, assignment prompts, slides, notes, syllabus, simulations, datasets, discussion threads. Conversely, any materials created solely by you (for example, your videos, essays, images, audio files, annotations, notes) are your intellectual property and you may use them as you wish.

RELIGIOUS ACCOMMODATION

UC Santa Cruz welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement conflicts with religious observances and practices. If that happens, students may request the reasonable accommodation for religious practices. The instructor will review the situation in an effort to provide a reasonable accommodation without penalty. You should first discuss the conflict and your requested accommodation with your instructor early in the term. You or your instructor may also seek assistance from the [Dean of Students office](#).

PRINCIPLES OF COMMUNITY

Instructors may want to involve students in the preparation of principles of community for your course. This allows students to be partners in deciding what guidelines you will collectively follow to ensure free, open, and respectful discussions. A sample of such principles appears below:

The University of California, Santa Cruz expressly prohibits students from engaging in conduct constituting unlawful discrimination, harassment or bias... [More here](#). I am committed to providing an atmosphere for learning that respects diversity and supports inclusivity. We need to work together to build this community of learning. I ask all members of this class to:

- be open to and interested in the views of others
- consider the possibility that your views may change over the course of the term
- be aware that this course asks you to reconsider some “common sense” notions you may hold
- honor the unique life experiences of your colleagues
- appreciate the opportunity that we have to learn from each other
- listen to each other’s opinions and communicate in a respectful manner
- keep confidential discussions that the community has of a personal (or professional) nature
- ground your comments in the texts we are studying. Refer frequently to the texts and make them the focus of your questions, comments, and arguments. This is the single most effective way to ensure respectful discussion and to create a space where we are all learning together.

TITLE IX/CARE ADVISORY

Instructors are encouraged to include a Title IX and CARE (Campus Advocacy, Resources & Education) statement in their syllabi to address their reporting responsibilities and to provide students with information on resources and support services. You are welcome to use the text below

or may prefer to alter this statement to suit your own needs; however, at a minimum, it is suggested that you inform students of the following: (1) University policy requires you to report Title IX misconduct, and (2) the CARE office offers confidential support. This sample statement was created in collaboration with the UC Santa Cruz Title IX Office and leadership at CARE.

UC Santa Cruz is committed to providing a safe learning environment that is free of all forms of gender discrimination and sexual harassment, which are explicitly prohibited under Title IX. If you have experienced any form of sexual harassment, sexual assault, domestic violence, dating violence, or stalking, know that you are not alone. The Title IX Office, the Campus Advocacy, Resources & Education (CARE) office, and Counseling & Psychological Services (CAPS) are all resources that you can rely on for support.

Please be aware that if you tell me about a situation involving Title IX misconduct, I am required to share this information with the Title IX Coordinator. This reporting responsibility also applies to course TAs and tutors (as well to all UCSC employees who are not designated as “confidential” employees, which is a special designation granted to counselors and CARE advocates). Although I have to make that notification, you will control how your case will be handled, including whether or not you wish to pursue a formal complaint. The goal is to make sure that you are aware of the range of options available to you and that you have access to the resources you need.

Confidential resources are available through [CARE](#). Confidentiality means CARE advocates will not share any information with Title IX, the police, parents, or anyone else without explicit permission. CARE advocates are trained to support you in understanding your rights and options, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. You can contact CARE at (831) 502-2273 or care@ucsc.edu.

In addition to CARE, these resources are available to you:

- If you need help figuring out what resources you or someone else might need, visit the [Sexual Violence Prevention & Response \(SAFE\) website](#), which provides information and resources for different situations.
- [Counseling & Psychological Services \(CAPS\)](#) can provide confidential counseling support. Call them at (831) 459-2628.
- You can also report gender discrimination and sexual harassment and violence directly to the University’s [Title IX Office](#), by calling (831) 459-2462 or by using their [online reporting tool](#).
- Reports to law enforcement can be made to the UC Police Department, (831) 459-2231 ext. 1.
- For emergencies, call 911.

DIFFICULT CONVERSATIONS

In our in-class and online discussions and dialogues, we will have the opportunity to explore challenging, high-stakes issues and increase our understanding of different perspectives. Our conversations may not always be easy. We sometimes will make mistakes in our speaking and our listening. Sometimes we will need patience or courage or imagination or any number of qualities in combination to engage our texts, our classmates, and our own ideas and experiences. We will always need respect for others. Thus, an important aim of our classroom interactions will be for us to increase our facility with difficult conversations that arise inside issues of social justice, politics, economics, morality, religion, and other issues where reasonable people often hold diverse

perspectives. This effort will ultimately deepen our understanding and allow us to make the most of being in a community with people of many backgrounds, experiences, and positions.

REPORT AN INCIDENT OF HATE OR BIAS

The University of California, Santa Cruz is committed to maintaining an objective, civil, diverse and supportive community, free of coercion, bias, hate, intimidation, dehumanization or exploitation. The Hate/Bias Response Team is a group of administrators who support and guide students seeking assistance in determining how to handle a bias incident involving another student, a staff member, or a faculty member. To report an incident of hate or bias, please use the following form: [Hate/Bias Report Form](#).

CONTENT ADVISORY

Consider including a content advisory if your course includes highly charged content. Content advisories give people the forewarning necessary for them to make use of the strategies that will decrease the harmfulness of encountering triggering material. They are not intended to censure instructors nor invite students to avoid material that challenges them. On the contrary, warning students of challenging material can help their engagement by giving them the ability to take charge of their own health and learning. Consider including a content advisory for content that may cause intense physiological and psychological symptoms. These samples are adapted from educators at UC Santa Cruz.

This course examines some texts, images, and videos that contain descriptions of violence and/or scenes depicting violence. I will do my best to provide individual warnings on the syllabus for course materials and in presentation slides for class content that are particularly sensitive. My hope is that these notifications will help your engagement by allowing you to prepare to work through challenging material. I encourage you to do what you need to care for yourself. If taking care of yourself means that you need to step outside during class, either for a short time or for the rest of the class, you may do so without academic penalty. If you do leave the class for a significant time, please make arrangements to get notes from another student or see me individually to discuss the situation.

In addition to a general statement, instructors may consider adding “tags” to specific course materials:

I've included tags for [X, Y, and Z] next to specific course materials on the syllabus. If you have concerns about encountering anything specific in the course material that I have not already tagged and would like me to provide warnings, please come see me or send me an email. I will do my best to flag any requested triggers for you in advance.

STUDENT SERVICES

[Counseling and Psychological Services](#)

Many students at UCSC face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

[Student Success and Engagement Hub](#)

The Division of Student Success provides campus-wide coordination and leadership for student success programs and activities across departments, divisions, the colleges, and administrative units.

[Tutoring](#) and Learning Support

At Learning Support Services (LSS), undergraduate students build a strong foundation for success and cultivate a sense of belonging in our Community of Learners. LSS partners with faculty and staff to advance educational equity by designing inclusive learning environments in Modified Supplemental Instruction, Small Group Tutoring, and Writing Support. When students fully engage in our programs, they gain transformative experiences that empower them at the university and beyond.

[Slug Support Program](#)

College can be a challenging time for students and during times of stress it is not always easy to find the help you need. Slug Support can give help with everything from basic needs (housing, food, or financial insecurity) to getting the technology you need during remote instruction.

To get started with SLUG Support, please contact the [Dean of Students](#) Office at 831-459-4446 or you may send us an email at deanofstudents@ucsc.edu.

Slug Help/[Technology](#)

The ITS Support Center is your single point of contact for all issues, problems or questions related to technology services and computing at UC Santa Cruz. To get technological help, simply email help@ucsc.edu.

On-Campus Emergency Contacts

Slug Help/[Emergency Services](#). For all other help and support, including the health center and emergency services, start [here](#). Always dial 9-1-1 in the case of an emergency.