Python Programming, Summer 2023

COMSC 140-5199 🖂 kylee@dvc.edu 📖 Diablo Valley College, Kyuwoong Lee

Course Description

This course presents an introduction to the Python language. Topics covered include: primitive and collection data types, operators and statements, loops and branching, functions and variable scoping, modules and packages, object-oriented programming, file handling and exceptions, and an introduction to Graphical User Interface (GUI) programming. CSU, UC

Course Outline

- ❑ Introduction to programming and problem-solving using Python.
- ❑ Problem-solving techniques and algorithms; program design, development, style, testing and debugging.
- ❑ Python syntax covered includes variables; data types; operators and expressions; control structures; library and user-defined functions; basic input/output; arrays; Object-Oriented design; Data Analysis Libraries.

Course Catalog Student Learning Outcomes

- ❑ Write a Python program using python strings. (Lecture and laboratory)
- ❑ Write a Python program employing Python sets and dictionaries. (Lecture and laboratory)
- ❑ Write a Python program employing Python classes and objects. (Lecture and laboratory)
- ❑ Describe the history of programming languages and how they evolved from procedural languages to Object Oriented Languages. (Lecture and laboratory)

Instructor Communications

Contact Info:

Name	Kyuwoong Lee, Ph.D.
Email	kylee@dvc.edu

Office Hours:

- ● Monday 10:00~11:00 am by appointment in Zoom Meeting
- ● Zoom link for online appointments. https://4cd.zoom.us/j/2756800440

Course Objective

- ❑ Design simple algorithms to solve variety programming problems.
- ❑ Design and implement programs of short to medium length, using standard elements of programming languages such as variables, input/output, control structures, functions/methods, and arrays.
- ❑ Describe the software development life-cycle.
- ❑ Describe the principles of structured and object-oriented programming and be able to describe, design, implement, and test structured and object-oriented programs using currently accepted methodology.
- ❑ Explain what an algorithm is and its importance in computer programming.
- ❑ Analyze and investigate program behavior to effectively alter or debug existing code.
- ❑ Design and implement specific program steps and components to achieve desired program behavior.
- ❑ Design and organize elements of a program using a structured representation such as pseudocode and/or flowcharts.
- ❑ Design and implement simple graphical and command line user interface implementing the algorithms.

Textbooks &References

Main Textbook:

   Starting out with Python, Tony Gaddis, 5th Edition, published by Pearson, 2021, ISBN: 9780136912330

Reference Books:

Think Python: How to Think Like a Computer Scientist, 2nd Edition, Allen Downey, published by O'Reilly, ISBN: 978-1491939369

Python Cookbook: Recipes for Mastering Python 3, 3rd Edition, David Beazley and Brian K. Jones, published by O'Reilly, ISBN:978-1449340377

Learning Python: Powerful Object-Oriented Programming, Mark Lutz, published by O'Reilly, ISBN:978-1449355739

Additional Online References:

Python 3.10.1 Documentation, The official Python Documentation, https://doc.python.org/3/

Language Reference, https://docs.python.org/3/reference/index.html

Library Reference, https://docs.python.org/3/library/index.html

W3 Schools, Python tutorial, https://www.w3schools.com/python/

Course Schedule

Module	Due Date
Week 1: Setup Programming Development Environment	Jun 17
Week 2: Chapter 1. Introduction to Computers and Programming Chapter 2. Input, Processing, and Output	Jun 24
Week 3: Chapter 3. Decision Structures and Boolean Logic	Jul 1
Week 4: Chapter 4. Repetition Structures Exam 1: Programming Quiz Exam: CSLO Review Quiz 1 (Multiple Choices Quiz)	Jul 8
Week 5: Chapter 5. Functions Exam 2. Programming Quiz Exam: CSLO Review Quiz 2 (Multiple Choices Quiz)	Jul 15
Week 6: Chapter 7. List and Tuples 1 and 2 Exam 3. Programming Quiz Exam: CSLO Review Quiz 3 (Multiple Choices Quiz)	Jul 20

Grading and Exams

There will be several programming quizzes, assignments, and mid-term and final exams.

1. **Programming Labs.** 30%**.** Each chapter contains several programming labs to practice the topics of essential programming structures. All programming labs should be completed in Lab time or by the designated due date as homework.
2. **Programming Quizzes and Assignments.** 30%. Quizzes will test comprehension of the program development process. Quizzes are the implementation of programs for the given small problems using VS Code. Students should illustrate the definition of problems to solve in Python and the process of development, including testing and debugging history.
3. **Mid-Term and Final Examination.** 40%. We will have the programming examination. You should explain your algorithm for solving the given problem and the overall program development process.

Final Evaluation			
90%	*A*	*60%*	*D*
80%	*B*	*Others*	*F*
70%	*C*		

4. **Late Policy**:
   ▪ You are given 3 "grace days," which you can use to give yourself extra time without penalty.
   ▪ The late work handed in within a week will be deducted **50%** points. After a week, the late submission will not be accepted.

▪ The instructor-granted extension could be considered in exceptional situations.

Dates to know

Students are expected to monitor and manage their own status in this class. Here are the important deadlines.

Make sure you are familiar with all of the important dates on the DVC Academic Calendar.

Academic Honesty

It is assumed that no student will copy the work of other students, use the answers of other students during quiz's, tests or exams, or have another student our outside individual do their classroom work for them. Any of these behaviors will not be tolerated. The student is enrolled in the course to benefit from the content presented, and any of these behaviors hinder these benefits. Dishonesty will not be tolerated and if identified, said student will be withdrawn from the course immediately.

● Students must not copy the work of other students, use the answers of other students during quizzes, tests, or exams, or have anybody do their coursework for them. Any of these behaviors will not be tolerated. If identified, the student will be withdrawn from the course, assigned a grade of 'F', and forwarded to the College for further disciplinary action.
● On quizzes and exams, if you copy answers from any source or if you give your work to other students, you'll receive a grade of F on that entire quiz or exam.

Student Behavioral Policies:
● https://www.dvc.edu/communication/policies/student-rights/academic-dishonesty-links.html
● https://www.dvc.edu/enrollment/assessment/academic-proctoring-center/rules.html
● Academic Honesty

Online Tutoring

There are two ways for DVC students to receive free online tutoring in Canvas: via **DVC's Student Center** and via **NetTutor**. To receive help from the Tutorial Center, click the **DVC's Student Center** link in DVC home page. To receive help from NetTutor, click the **NetTutor** link. Tutorial Center tutors are available at certain times during the fall and spring semesters, while NetTutor tutors are available 24x7 year-round. For more information, view the DVC NetTutor page.

Coding Environment

In this course, the **Visual Studio is** strongly recommended to compile and execute your programs. Any IDE for Python could be used including PyCharm, Spyder, Ipython IDLE, Sublime Text 3 and Jupyter Notebook. In this class, we basically use the **VS code**. This class also recommend the online Python Interpreter use such as Google Colab, Jupyter Notebook and Repl.it

Technical Support

If you need any help to use computer resources, Information Technology and Services will provide the solutions to help your problem. Contact DVC Service Desk during weekdays to get any Canvas problems solved. During nights and weekends, you can email to help@4cd.edu or 925-969-2576.

Canvas

All course materials are available at the DVC Canvas https://4cd.instructure.com/courses/80806. There you will find the syllabus, lecture materials, supplementary animation video, homework assignments, and programming source files. Announcements to students will be posted on the web site and emailed to all users. If you have any question about the course or any subjects, just feel free to contact me any time.

Student's Rights and Responsibilities

The Contra Coast Community College District accords every student the right of protection. Students, however, must also be aware that they are responsible for complying with all College regulations and for meeting the appropriate College requirements. The links to the webpages for details are here:
https://www.dvc.edu/communication/policies/student-rights/index.html

Student Assistance Services

- If you have special needs (physical or mental) such as needing a quiet place to work, special equipment to get your work done or the like, please notify administration in administration building and they will contact the instructor as to what is needed to assure you are successful in this class. The DSPS organization must notify the instructor via Email or written documents what the needs of the student are and each student must notify the instructor when these services are required.
- Resources for our students:
  - Mobility Assistance:
    https://www.dvc.edu/student-services/disability-support-services/dss-student-handbook/program-services/mobility-assistance.html