

DSC 430-901 Python Programming, Spring 2022

Instructor: Noriko Tomuro

Class hours: Thursday 5:45 – 9:00 PM, CDM 226

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Office Hours: Fridays. 5:00 - 7:00 PM, by Zoom. (Schedule Advising Appointments through BlueStar.)

Course website: <https://d2l.depaul.edu/>

1. Course Description

This course builds the skills necessary to use Python to develop larger programs and libraries. Students will learn to design, implement and debug Python functions and programs, including stochastic and object-oriented techniques. The course will cover Python data structures, and Python facilities for working with files, strings, regular expressions, databases and URLs. The course will also include an introduction to the Pandas package for data management, the NumPy package for scientific computing, and the Matplotlib package for visualization.

Prerequisite: CSC 401. Students are expected to know the basic programming concepts and have experiences with IDEs.

Course objectives:

This course is intended to provide training in Python Programming. Students should focus on the word “Programming” rather than “Python”. Learning the basics of the Python language is neither challenging nor particularly useful if it is not integrated into a broader understand of programming. By the end of this class student should be able to:

- Decompose complex problems into smaller approachable subproblems.
- Write code that conforms to standard best practices.
- Develop and implement efficient algorithms.
- Manage data from text files, databases, and the web.
- Leverage Python packages for visualizing and manipulating data

2. Textbook, Software and Other Resources

- **Textbook:** There is no required textbook for this course.
- **Software:** We will use the current Python 3 distribution. As for IDEs, anything that a student is familiar with and feels comfortable is fine, as long as the code is a .py script file. However, code demonstration and grading will use the Anaconda package (<https://anaconda.org/anaconda/python>).

3. Coursework

The coursework consists of quizzes and assignments. There will be no midterm or final exams.

- **Quizzes:** There will be a total of 10 online quizzes (1 per week). A quiz may be attempted as many as 2 times and the highest grade is recorded. Quizzes are taken online through the D2L. The

purpose of the quizzes is not to test your knowledge; rather it aims to ensure you are keeping up with the course.

- **Assignments:** There will be a total of 20 assignments (2 per week). Assignments must be completed independently. Each assignment must include the honor statement and other information specified in the section 'Policy on Assignment Submission Materials' below.

4. Attendance Requirement

As this is an On-Campus section of the course, class attendance is **mandatory**. Students who miss class due to illness or other significant personal circumstance in which documentation has been obtained, must complete the Absence Notification Process through the Dean of Students Office (DOS; <https://offices.depaul.edu/student-affairs/support-services/academic/Pages/absence-notification.aspx>). After the instructor receives notification from the DOS, or in instances where there is no documentation, it will be up to the instructor's discretion to excuse the absence.

5. Grading

The course grade will be computed as follows:

- ✓ **Attendance** (5%)
- ✓ **Quizzes** (20%) – No late submissions are accepted. The **quiz with the lowest score will be dropped** from the calculation of the final course score.
- ✓ **Assignments** (75%) – Late submissions are accepted up to three days late. However, a **10%-point penalty will be applied for each day** that is late.

Students receiving more than 90% of possible points are guaranteed at least an A-, more than 80% at least a B-, more than 70% at least a C-, and more than 60% at least a D.

6. Policy on Working Together

Collaboration on assignments IS permitted. Students are encouraged to discuss problems in the assignments and solution ideas with other students or tutors. However, each assignment handed in must be done by the person submitting it. All assignment submissions will be run through TurnItIn which is plagiarism detection software. This software compares your assignment with all other submissions ever submitted for this course.

7. Policy on Assignment Submission Materials

ALL submission materials (except for online quizzes/exams) must have the **student's name**, the **course name** ("DSC 430 Python Programming"), the **assignment number** (e.g. HW#1-1), and the **honor statement** "*I have not given or received any unauthorized assistance on this assignment.*" typed at the top of the submission files. Submissions without those information will not be graded and receive a score of 0.

8. Email Communication

Any email to the instructor should begin the **subject line starting with "DSC 430"**, so that your message can be easily identified. Failure to do so will delay the response time from the instructor.

9. Tentative Schedule of Topics

- ❖ Week 1: Python Review
- ❖ Week 2: Art of Programming
- ❖ Week 3: Best Practices
- ❖ Week 4: Algorithms
- ❖ Week 5: Object Oriented Programming
- ❖ Week 6: Managing Data
- ❖ Week 7: Monte Carlo
- ❖ Week 8: Software Engineering Week
- ❖ Week 9: Python Packages
- ❖ Week 10: Job Interviews

10. Important Dates

- 3/31 (Thu) -- First day of class
- 4/1 (Fri) -- 11:59 PM Deadline to add classes to SQ2022 schedule
- 4/8 (Fri) -- Last day to drop SQ2022 classes with no penalty (100% refund of tuition if applicable and no grade on transcript)
- 4/15 (Fri) -- Good Friday - University officially closed
- 4/16 (Sat)–17 (Sun) -- Easter Holiday - University officially closed
- 5/13 (Fri) -- Last day to withdraw from SQ2022 classes
- 5/30 (Mon) -- Memorial Day - University officially closed

11. School and University Policies

School policies (on Changes to Syllabus, Online Course Evaluations, Academic Integrity and Plagiarism, Academic Policies, Students with Disabilities) are found at

<https://www.cdm.depaul.edu/academics/pages/classinfo.aspx?Term=20223&ClassNbr=37398&fid=339459>

University policies and student expectations are below.

Attendance

Much learning happens while working with peers, discussion, and participation in a community. These are learning experiences that are almost impossible to make up individually. If you have concerns about your ability to attend class sessions, please reach out to me via email to discuss your concerns.

Class Discussion

Student participation in class discussions will be measured in two ways. First, students are highly encouraged to ask questions and offer comments relevant to the day's topic. Participation allows the instructor to "hear" the student's voice when grading papers. Secondly, students will be called upon by the instructor to offer comments about lecture topics. Students must pay the fullest attention to the lecture during the class to keep up with the materials and to participate in class discussion.

Attitude

A professional and academic attitude is expected throughout this course. Measurable examples of non-academic or unprofessional attitude include but are not limited to: talking or disrupting class when the instructor is speaking, mocking another's opinion, and cell phones ringing while being in the class. If any issues arise a student may be asked to leave the classroom. The professor will work with the Dean of

Students Office to navigate such student issues.

Civil Discourse

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be Socially Responsible Leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.

Cell Phones/On Call

If you bring a cell phone to the class, it must be off or set to a silent mode. Should you need to answer a call during class, students must leave the classroom in an undistruptive manner.