DSC 430: Python Programming

Course Information

Title: DSC 430: Python Programming

Meeting Time: Thursday 5:45pm to 9:00pm – (sections 802 & 811)

The class runs from Jan. 11th to Mar. 14th

Location: LEWIS 1007 for two in-person sessions: the first one on **Feb. 1st**; the second one **TBD.**

Rest of the sessions will be held online via Zoom.

Note: Students who have registered for section 811 are not required to join the classes—they can just watch the recorded lectures that will be made available weekly after each class meeting.

Contact Information

Instructor: Jamshid Sourati

Email: jsourati@depaul.edu

Office Hours: Monday from 11:30am to 1:00pm.

Location: All offices hours will be held online via this Zoom link.

Course Overview

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 NumPy package for scientific computing, the Pandas package for data management, and the Matplotlib package for visualization.

Course Objectives

DSC 430 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 understanding 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 manipulating and visualizing data.

Schedule

Week 1: Python Review
Week 2: Algorithm Design
Week 3: Best Practices
Week 4: Algorithm Development and Analysis
Week 5: Object Oriented Programming
Week 6: Managing Data
Week 7: Monte Carlo
Week 8: Numeric Python Packages
Week 9: Matplotlib Visualization
Week 10: Software Engineering Tips

Course Management System

We will use DePaul University's Desire2Learn (D2L) system (d2l.depaul.edu). All homework sets, quizzes and required Zoom links will be posted on the course's D2L.

Attendance and Participation

Students who have taken the in-person section of the course (802) are expected to attend the two in-person sessions at LEWIS 1007 and other eight synchronous online classes via Zoom. The classes will begin on Jan. 11th and the first session will be online. We will have two in-person sessions this quarter: our first in-person lecture will be on Feb. 1st, and the second in-person session will be after that, but its exact date will be announced shortly on the class D2L. For those taking the asynchronous online section of the course (811), there is no expectation to attend the in-person/synchronous online sessions at any specific time. They can just watch the recorded lecture that will be uploaded on D2L weekly after each class meeting. However, everyone is expected to interact with the class on a weekly basis (e.g., through completing quizzes, submitting assignments, and participating in the class discussion forums).

We will be doing a lot of programming in this class. For the two in-person sessions that we will have, I suggest you bring your laptop to class so you can work along as we do examples. The number of outlets in the classroom is limited so make sure your laptop is charged.

Course Prerequisites

CSC 401 or IS 411: Introduction to Programming. Students are expected to understand basic programming concepts and have experience with IDEs and code editors.

Recommended books and Software

Book: None.

Software: We will use the current Python 3 distribution. It is available in all DePaul labs. Students may their editor of choice to develop their codes and modules. Recommended environments include Visual Studio which can be downloaded and installed with through student account—see the CDM website.

Emails

I make every attempt to reply to emails within 24 hours. Include the course number, your name, and your student ID in the title of the email. Emails should be written in a professional manner with clear and concise language.

News Widget

The primary form of communication for this class will be the news widget on the D2L. Subscribe to the widget and ensure that DePaul has you correct email.

Forums

The class forum is the preferred place to ask questions about the class. If you have questions about a quiz or lecture notes, please post them there. I read these frequently. All students should subscribe to the forums so that you receive email updates.

Quizzes

The course will include 10 online quizzes (1 per week), each worth 2% of the final grade. Quizzes may be taken as many as 7 times and only the highest grade is recorded. Quizzes are taken online through the D2L. They will become available at each Thursday's evening after the class and will be due by the following Thursday at 5:30pm, i.e., 15 minutes before our weekly class.

The main purpose of these quizzes is not to test your knowledge, but to further engage you in the flow of the class materials. You may (and are encouraged) to work through the problems with your fellow classmates, ask questions or even offer potential solutions on the forums.

Assignments

The course will include 20 assignments (2 per week), each worth 4% of the final grade. Assignments must be completed independently. Like quizzes, they will become available after each session, and will be due by the following Thursday at 5:30pm.

 Each assignment must include the honor statement, "I have not given or received any unauthorized assistance on this assignment." Note that getting help from any type of generative AI tools to write the codes is considered an unauthorized assistance. Moreover, each assignment must be submitted with a short 3-minute video in which you explain your code. Assignments without such video will not receive any points.

Course Evaluation

Quizzes: 20%
Assignments: 80%

Regrade requests

A CDM grader is assigned to grade assignments. If you feel the grader has made an error, you may request that I regrade the assignment. The regrade procedure is intended to correct serious errors in grading. It is not intended as an opportunity to argue about each judgment call made by the grader. Please see the document "Regrade Request Procedure" on the D2L for more information.

Late Policy

Late quizzes receive 0 points without exception. Late assignments are penalized 1% per hour.

Grading Scale

A: 90% - 100%
B: 80% - 90%
C: 70% - 80%
D: 60% - 70%
F: less than 60%

Plusses and minuses are given for the upper and lower 3% in a letter's range.   There is no A+.

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

Plagiarism

Students in this course should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic F in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as his/her own work any assignment which has been prepared by someone else. If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

Academic Integrity

Work done for this course must adhere to the University Academic Integrity Policy, which you can review in the Student Handbook or by visiting "Academic Integrity" (academicintegrity.depaul.edu) at DePaul University.

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at:

www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx

Incomplete Grades

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval. Information about the Incomplete Grades policy can be found at:

www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx

Writing Center

Consider contacting or visiting the Writing Center to discuss your assignments for this course or any others. You may schedule appointments (30 or 50 minutes) on an as-needed or weekly basis, scheduling up to 3 hours worth of appointments per week. Online services include Feedback-by-Email and IM conferencing (with or without a webcam). All writing center services are free.

Writing Center tutors are specially selected and trained graduate and undergraduate students who can help you at almost any stage of your writing. They will not do your work for you, but they can help you focus and develop your ideas, review your drafts, and polish your writing. They can answer questions about grammar, mechanics, different kinds of writing styles, and documentation formats. They also can answer questions and provide feedback online, through IM/webcam chats and email. Obviously, the tutors won't necessarily be familiar with every class or subject, but they are able to provide valuable help from the perspective of an interested and careful reader as well as a serious and experienced student-writer.

Students with Disabilities

Students seeking disability-related accommodations are required to register with DePaul's Center for Students with Disabilities (CSD) enabling them to access accommodations and support services to assist with their success. There are two office locations:

- Loop Campus – Lewis Center #1420 – (312) 362-8002
- Lincoln Park Campus – Student Center #370 – (773) 325-1677

Students who register with the Center for Students with Disabilities are also invited to contact Dr. Gergory Moorhead, Director of the Center, privately to discuss how he may assist in facilitating the accommodations to be used in a course. This is best done early in the term. The conversation will remain confidential to the extent possible. Please see:

offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx

Schedule your appointments with enough time to think about and use the feedback you'll receive. Bring your assignment handout and other relevant materials to your appointments.

Student Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Please see https://resources.depaul.edu/teaching-commons/teaching/Pages/online-teaching-evaluations.aspx for additional information.