**CS602 – Data-Driven Development with Python**

**Summer 2021 Section: SN1**

**Instructor: David Rude**

**E-Mail: drude1@bentley.edu  
Meeting Time: Monday, 6:00 – 9:30 PM   
Classroom: Online (Zoom)**

**Office Hours: On Zoom, by appointment or announced**

# Required Textbook

Course Information

**Liang, Y. Daniel, Introduction to Programming Using Python, Pearson**. The book has a [companion](http://liveexample.pearsoncmg.com/liang/py/toc.html) [website](http://liveexample.pearsoncmg.com/liang/py/toc.html) with code examples from the book and solutions to the even end-of-chapter review questions.

## Jake VanderPlas, Python Data Science Handbook: Essential Tools for Working with Data. O'Reilly Media. (PDF available)

**Course Description**

Python is an easy-to-learn, widely versatile programming language whose extensive collection of external libraries makes it a popular choice for business analytics and visualization, data science, artificial intelligence, scientific and numeric computing, and many other applications. Its compatibility with leading analytics tools that are widely used in enterprises also places it in high demand. Students in this course will first learn the fundamentals of programming that are common to all programming language. They will then work with Python libraries commonly used in performing data analytics tasks. No prior programming experience is required.

Blackboard Site: All materials for this course, including handouts and code examples, will be available on the Blackboard website from the Course Notes and Code menu option. Assignments will be distributed and submitted by the students via the Assignments links. Be sure to check the Announcements frequently for information on any new postings or messages about lectures and assignments.

# Course Policies

Students are expected to attend class regularly and to complete weekly reading and programming assignments and homework projects. It is the student's responsibility to read and learn the material contained in the text and in handouts and to complete all programming practice problems assigned weekly. Class time will be spent discussing the important concepts contained in the reading assignments and sample problems, and in clarifying confusing details of the readings or software use. A significant amount of work outside of class will be needed for students to adequately master the material necessary to complete the programming assignments. You should plan such time into your regular weekly schedule. I am readily available outside of class during office hours and by appointment if you have questions or need additional assistance.

Assignments: Unless otherwise noted, programming assignments will typically be due by **Midnight** on their due date and must be submitted via the appropriate Assignment link on the Blackboard site. An assignment that is submitted late but within 24 - 48 hours of the deadline will be awarded a maximum of 75% of the available credit for that assignment. No submissions will be accepted after the 48-hour late period. Waiting until the last minute to start an assignment is the quickest path to failure; start early and, if you have questions, please see a lab assistant or me at least 48 hours before the assignment is due. If there are extenuating circumstances, be sure to get in touch as soon as possible.

# Academic Integrity

Students are welcome to discuss the course material with their classmates but **cannot collaborate on solutions to programming assignments. The code submitted by a student must be entirely his/her own.** Do not share your files with anyone else in the class. Do not make use of code from students in this or other sections of this course or from past students. Do not represent someone else’s work as your own (such as code found on the internet). All students are expected to adhere to the CIS Department’s [academic honesty policy.](http://cis.bentley.edu/wlucas/academic_honesty.htm) In addition, you must adhere to Bentley’s Academic integrity policy, which includes Bentley’s Honor Code (available from the academic integrity page on Blackboard). Failure to observe these policies can have serious consequences, including course failure, suspension, or even expulsion from the university. If you are feeling overwhelmed, please see me rather than resorting to actions that will cause additional stress and harm.

# Getting Help

Visit the CIS Sandbox online at <http://cis.bentley.edu/sandbox> for assistance from tutors, or to make a one-on-one appointment with a tutor. Please see the CIS Sandbox website for details.

Drop-in hours are:

* Mondays, 7 to 9 pm with TBD
* Tuesdays: 4 to 6 pm with TBD
* Wednesdays: 4 to 6 pm with TBD
* Thursdays: 7 to 9 pm with TBD

CIS Sandbox tutors will hold weekly CS 602 Review Sessions at which they will work with students to complete the practice programming problems assigned in class. These review sessions will be held

* Tuesdays, 12 to 1:30 pm with TBD
* Fridays, 5:30 to 7 pm with TBD

Please plan to attend one of these sessions at your convenience. We will review some but not all practice programming problems in class. These will NOT be graded.

I will hold office hours on Zoom as announced on Blackboard or by appointment. Please email me for an appointment.

# Evaluation

Your final course grade will be based on the following components:

|  |  |  |
| --- | --- | --- |
| Assignment | Percent | When |
| Practice Problems | 0% | Weekly |
| Program #1 | 5% | Assigned Week 1, Due Week 2 |
| Program #2 | 10% | Assigned Week 2, Due Week 4 |
| Program #3 | 10% | Assigned Week 4, Due Week 6 |
| Program #4 | 15% | Assigned Week 6, Due Week 8 |
| Program #5 | 15% | Assigned Week 8, Due Week 10\* |
| Quiz 1 | 20% | Week 5 |
| Quiz 2 | 20% | Week 9 |
| Class Presentation | 5% | In Class Presentation of Program 5 |
| Total | 100% |  |

\*For program 5, you will submit your project's individual requirements at least one week before the due date, implement the project and then present it during the final class meeting.

If you have questions on the grading of either quiz, please make an appointment to see me within one week after the quiz is returned in class.

Your meaningful participation will make this class even more enjoyable! I expect you to ask and answer questions as well as offer worthwhile observations on the material under discussion. Please actively participate in in-class exercises, complete assigned readings, and work through the example problems in the textbook prior to class.

# Additional Readings Which You Might Find Helpful or Interesting:

# [How to Think Like a Computer Scientist: Interactive Edition](https://runestone.academy/runestone/books/published/thinkcspy/index.html) (optional textbook)

# [Why Python is a Great First Language](https://blog.trinket.io/why-python/)

# [TED Talk: How Algorithms Shape our World](https://www.ted.com/talks/kevin_slavin_how_algorithms_shape_our_world)

# [11 Must-Watch TED Talks on Data Science](https://www.springboard.com/blog/11-must-watch-ted-talks-on-data-science/)

# Disability Statement

Bentley University abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, which stipulate no student shall be denied the benefits of an education solely by reason of a disability. If you have a hidden or visible disability that may require classroom accommodations, please call the Office of Disability Services within the first 4 weeks of the semester to schedule an appointment. The Office of Disability Services is located in the Office of Academic Services (JEN 336, 781.891.2004). The Office of Disability Services is responsible for managing accommodations and services for all students with disabilities.