COSC4381 Seminar in Computer Science/ COSC5390 Topics in Computer Science: Python for Data Science
Summer II 2022 (07/05/2022 – 08/05/2022) – Full Distance Education Course

General Course Information

Instructor	Dr. Yi Li Email: yli@uttyler.edu
Lecture	Mo/Tu/We/Th/Fr 12:40 PM – 2:20 PM on Zoom
Office Hour	By appointment
Required Device	Programmable Computer. Windows, Mac OS, or Linux OS with speaker, a microphone and Webcams. Reliable Internet Access.
Required Text	No textbook required
Suggested Materials	1. Python tutorials https://docs.python.org/3/tutorial/ https://www.learnpython.org/ https://www.w3schools.com/python/ 2. Python Data Analytics with Pandas, NumPy, and Matplotlib, 2nd edition, Fabio Nelli, Apress, 2018, ISBN: 978-1484239124. 3. Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython, 2nd edition. Wes McKinney, ISBN: 978-1491957660 4. Intro to Python for Computer Science and Data Science 1st edition, Paul Deitel, Harvey M. Deitel, ISBN: 978-0135404676
Prerequisites	COSC 1337 (or equivalent)
Course Description	The course introduce students to important Python programming concepts such as data operations, file operations, object-oriented programming, and various Python libraries such as Pandas, Numpy, Matplotlib essential for Data Science. Topics include Python basics, data analysis and visualization libraries, and machine learning concepts. Through hands-on projects, students will learn to both analyze and visualize different types of data with Python language.
Course Objectives	1. Analyze data given in spreadsheets using Python 2. Generate inferred information on new spreadsheets 3. Create visualizations of tabular data

Tentative Course Schedule			
	Week	**Dates**	**Lecture Topics**
	1	7/5 - 8	Python Basics
	2	7/11 - 15	NumPy, Pandas
	3	7/18 - 22	Pandas cont'd, Matplotlib
	4	7/25 – 29	Matplotlib cont'd, Seaborn
	5	8/1 - 5	Machine Learning Concepts

*Note that the schedule is subject to change as the course progresses.

Grading Policy	Quizzes/Exercises – 20%	90.0 - 100%	A
	Assignments/Projects – 50%	80.0 - 89.99%	B
	Exams – 30%	70.0 - 79.99%	C
		60.0 - 69.99%	D
		Below 60%	F

Course Policies

- Assignments should be turned in no later than the deadline. Turn in what is completed by the deadline for partial credit. No late submissions will be accepted. You must take exams at the date and time scheduled; there will be no make-ups for missed exams.
- You are expected to do your own work. You may assist each other with general concepts, but direct assistance with a particular assignment or any attempts to gain an unfair academic advantage will not be tolerated. Any indication of cheating and/or plagiarism on an exam/assignment/project will be an automatic 0 (zero) for the exam/assignment/project for all students involved. Solutions copied from the internet, instructor's manual, etc. will also be given zero credit. If you have questions about the line between assistance and cheating, discuss it with the instructor. For examples of Scholastic Dishonesty, please visit Section 8-802 of the Manual of Policy and Procedures.

Projects

All projects are individual assignments that focus on each topic covered in class. Your project has to meet the series of requirements given in each assignment. Detailed requirements will be published on Canvas. If your submission does not fulfill the requirements, the project will be rejected, and your score will be a ZERO. This will apply to all of your projects in this class.

Helpful Comments

This class covers a lot of material and new concepts. To get full benefit out of the class you must work regularly. Attend the classes regularly and start working on the assignments soon after they are handed out. Plan to spend at least 10 hours a week on this class doing assignments or reading.