CSCE 3101 – Programming Language – Python (3 CH)
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Recommended Book:

- Introduction to Computing Using Python by Ljubomir Perkovic.
- Learning Python by Mark Lutz.
- Python Programming with Design Patterns by James Cooper.
- Effective Python: 90 Specific Ways to Write Better Python by Brett Slatkin.
- High Performance Python by Micha Gorelick & Ian Ozsvald.
- Python Distilled by David Beazley.

Course Description:
The most important thing to note about this course, is that you are here to learn something new and fun! Python is one of the most popular programming languages around the globe. IEEE Spectrum ranks it as the number one programming language according to their ranking methodology. You think you can program in Python? Think again. There are "Coding" ways and there are "Pythonic Coding" ways. In this course, we do not only learn the syntax of the language, but we compare it to other languages, and look at some of its internal workings. We start slow, and ramp up. While it is considered one of the lesser "green" programming languages, it is highly expressive, allows for superb productivity in coding, and can be made efficient and greener. There are multiple resources listed in this course for your reference. Welcome aboard!

Main Topics

- Fundamentals of Python.
- Selections, Loops, and Functions.
- Lists , tuples, sets, dictionaries, and multidimensional lists.
- Recursion.
- Objects.
- Files.
- Web searching.
- Databases and data processing.
- Elegance using design patterns.
- High performance consideration issues.
- Python libararies.
- Other selected topics.

Python Documentation: https://docs.python.org/3/

Development Environments

Use whatever you feel comfortable with: Jupyter notebooks, Spyder, PyCharm, IDLE, Visual Studio, Atom, PyDev, …

Course Policy:

- All assignments are individual unless otherwise stated. Assignment deadlines are strictly observed with no exceptions other than with a documented excuse. Any assignment submitted after the deadline, and up to 48 hours post the deadline will incur a penalty of ten percent of the assignment grade. No assignments are accepted after the 48 hour cutoff, unless with a documented excuse.
- You are responsible for submitting your assignment well before the deadline. You are also responsible for backing up your work regularly. Assignments need to be delivered via the learning management system only.
- University policy is strictly applied with regards to academic integrity, and will be reported. Please familiarize yourself again with the university policy.
- You will need to use your own device to conduct your examinations, where applicable. Rules governing examinations conducted with your own device will be further explained in class.
- We will set some ground rules at the beginning of the course so that we can facilitate learning.
- Changes to the modality of teaching this semester may prompt some announced changes to the course policies.
- We do not necessarily follow the same order as in the textbooks. The intent is to allow you to map better to an agile development process. Please make sure you take notes of what has been covered, and do not ask which chapters are included in the exams.
- You can use LLMs as a productivity tool to learn. Do not use them to generate code for assignments, but you can use them to accelerate the development of your project as long as you indicate exactly how you used them.

Grade Distribution

- 35%   Assignments
- 25%   Midterm.
- 20%   Presentations about topics that you will be assigned.
- 15%   Project using at least one of the Python libraries.
- 5%   Participation and/or Quizzes (to be announced).

Academic Integrity Policy
AUC academic fraud and dishonesty includes, but is not limited to, the following categories: cheating, plagiarism, fabrication, multiple submissions, obtaining unfair advantage, unauthorized access to academic or administrative systems, aiding and abetting, impersonation, threatening harm, and copyright infringement. More information at:
https://www.aucegypt.edu/academics/academic-integrity

Services for students with disabilities:
If you are a student with a disability who requires accommodations, please contact the Office of Disabilities Services during the first few days of the semester. You have all the support you need within the regulations of the university. More information can be found at: https://www.aucegypt.edu/student/well-being/disability-services

Learning is fun. Have a great semester!