Course Content:

week 1#:

- Lecture 1#: introduction to the course.
- Lecture 2#: programming languages categories.
- Lecture 3#: programming languages paradigms.

Week 2#:

- Lecture 1#: interacting with the command line.
- Lecture 2#: Git and GitHub.
- Lecture 3#: text editors vs IDEs.

Week 3# & 4#: an introduction to C programming language as a static, procedural, compiled language:

We will be applying basic concepts of programming in the the C language, presenting the basic thinking and problem solving mechanisms applied in the characteristics of the language.

The flow of the learning process will be as follows:

- introducing the C language + setting our working environment to work with C.
- variables and data structures.
- Execution flow control with loops and conditions.
- How to interact with the memory.
- Environment variables, pre-processor directives sand header files.
- Dealing with user input.
- System calls.

Week 5# & 6#: an introduction to Python language as a dynamic, OOP, interpreted language:

Following the same flow in the previous couple of weeks, we will be introducing the Python programming language with its concepts and mechanisms to showcase the differences between the different categories of programming languages.

The flow of the learning process will be as follows:

- Introducing the Python language + setting our working environment to work with Python.
- Variables and objects.
- Execution flow control with loops and conditions.
- How to interact with the memory.
- How to make use of existing libraries.
- The modulatory nature of Python.
- File manipulation.

For weeks 3 to 6, there will be assignments and homework to be done, if possible. Accommodation for any incapability to do the homework projects will be considered.

Week 7#: automating your work using Python and Bash:

- Lecture 1#: What is Bash?.
- Lecture 2#: how to automate repetitive tasks using bash.
- Lecture 3#: how to make use of Python in automating scripts.
- Lecture 4#: recap.

Week 8#: Final certificate project:

For the last week of our journey, will be faced with the last milestone of the course which is the final certificate procedural.
In this project, we will be applying what we learned through the span of the 7 weeks in a project of our choice, or a project from the presented suggestions. Passing the final project is a crucial part of the final evaluation for the course certificate.

Best Hopes, Eng. Ali Hassan.