

Syllabus

DAY1

Participants will get an overview of the history of computer development. Von Neumann model of the computing and data processing will be introduced and explained. Concepts of metalanguage will be explained, and participants will write simple programs for calculation in metalanguage. Second part of the day will be devoted to writing simple programs in batch. Participants will learn how to create simple, but useful and fast triage tools and automate tasks in windows OS.

- Understand the basics of computer technology
- Learn basic concepts of programming
- Understand and create programs using metalanguage
- Create algorithms of simple processes in digital forensics
- Understand the model of procedural and object-oriented programming
- Understand how and why scripting languages can help us improve digital forensic investigations
- Batch and shell scripting in digital forensic

DAY2

Day two will be focused solely on working with Python. It will cover history, versions, IDE's, basic operators, flows and flow controls, working with files, lists, dictionaries, strings, and other data types and structures. Finally, participants will learn how to create and work with functions. Entire day is based on hands-on exercises that create small parts of programs and functions that can be applied to digital forensics.

- Learn how to install different versions of Python
- Understand basic data types and structures within Python programming language
- Understand files and basic file operations
- Use basic operators, conditions and loops
- Use sequence functions and operators
- Index and slice sequences
- Work with dictionaries and dictionary items
- Write functions and accept values through parameters
- Work with global variables and constants

DAY3

Day three deals with object-oriented approach. It covers classes, objects, polymorphism, and function overriding and overloading using simple real-life examples with hands-on exercises based on scripts related to solving problems in digital forensic

- Understand the terms object and object-oriented programming
- Understand how and why to use objects in programming languages
- Create and use objects
- Digital forensics libraries and modules related to forensics, their implementation into Python environment
- Objects and classes and their importance in Python programming
- Find and use online sources and databases for Python based digital forensic scripts
- Working with raw hex dumps
- Hands on exercises

DAY4

During day 4 participants will run, write and use several programs that utilize important programming concepts learned in previous lessons that can help automate series of digital forensics tasks.

- Divide large problems into a series of smaller problems and write programs to solve them
- Understand and modify existing programs for digital forensic analysis
- Show examples of complete programs from online sources that can be used during forensics investigations

- Modify and use programs that automate common tasks during forensic examinations
- Hands on exercises – working on different scripts related to digital

DAYS

Day 5 continues the work from the previous day. Additional forensic programs will be created and explained. The last part of day 5 is reserved for evaluation.

- Continuing exercises from the previous day
- Python integration with other forensic tools
- Student evaluation
- Exam