

**Module number: M6 Name of the module: Python Programming Responsible: P10-RRU (P8, P11, P12, P9, P13)**

ID	Didactic modules (Teaching materials)	Comments	THEO (D3.4)	PRAC (D3.5)	THEO hours	PRAC hours	Total of Hours	LEADER	Contributor	Interested
M6	C/C++/Python programming		8	10				P10-RRU	P8, P11, P12	P9, P13

Total number of hours: 18h (Theory: 8h, Practice: 10h)**Aims:**

The goal of the module is to give theoretical and practical Python Programming about Variable, Data Type, Expression and Operators, String, List, Tuple, Dictionary and Set, Control Statement, Functions, File I/O and IoT with Python. The students also will have the chance to programming with the ETAT Smart Lab.

Programme:Lecture:

- (1h) Introduction to Programming
- (1h) Variable, Data Type, Expression and Operators
- (1h) String, List, Tuple, Dictionary and Set
- (1h) Control Statement (If, if...else, if...elif, nested if, switch...case)
- (1h) Control Statement (while, for)
- (1h) Functions, File I/O
- (2h) IoT with Python

Practice:

- (2h) Installing and Testing Python Tools with ETAT Smart Labs
- (2h) Python programming in Variable, Data Type, Expression and Operators with ETAT Smart Labs
- (2h) Python programming in String, List, Tuple, Dictionary and Set with ETAT Smart Labs
- (2h) Python programming in Control Statement with ETAT Smart Labs
- (2h) Python programming for IoT with ETAT Smart Labs

Assessment method:

- Questionnaire for learning contents and using ETAT Smart Labs
- Results of theoretical pre-/post test
- Results of practical work

Prerequisites:

- Problem Solving
- Fundamentals of computer programming

Expected Learning Outcomes (ELOs):

- Knowing Python Programming with ETAT Smart Labs
- Programming to get data from IoT devices with ETAT Smart Labs