

# Introduction to Python with Google Colab (SAFI M0)

**1 day (7 hours)**

**Fees : from 400 € HT to 700 € HT**

**ONLINE TRAINING**

**Dates and detailed fees on [aste.asso.fr](http://aste.asso.fr)**

## Target Audience

This Python course is for beginners to learn Python using Google Colab. It is intended to professional Engineers, Project Managers, Data Analysts and Computer Scientists with responsibilities in new product design, planning. Whether you have never programmed before, already know basic syntax, or want to learn about the advanced features of Python, this course is for you.

## Prerequisites

A level of technical English suitable for regular professional use is required.

## Instructor

Dr Amr Rashad Ahmed ABDULLATIF, Assistant professor at the University of Bradford and experienced researcher proficient in research and developing machine learning and deep learning techniques.

## Training Delivery Methodology

The delivery is designed as a workshop style with an approximate 50/50 split between technical sessions and hands-on exercises, designed to explain the concepts by leveraging relevant industrial case studies.

Delivered online. Course package to be sent a week in advance with joining instructions and training materials.

## Technical equipment

The training is delivered as a virtual classroom, using Microsoft Teams. Login information sent at the latest 2 days before the training.

## Modes of Assessment

Attendance sheet signed each half day by the participants and co-signed by ASTE.  
Learning assessment based on individual or group presentation with argument on a miniproject.  
Training performance: qualitative assessment of the training by attendants at the end of the session.  
Delivery of a training certificate.

## Access Deadline

Open training: registration at the latest 7 days before the training.  
In-house training: organisation within 4 weeks minimum.

## Accessibility to Disabled people

Contact our Disability Officer : [info@aste.asso.fr](mailto:info@aste.asso.fr)

## LEARNING OUTCOMES

Assume you are new to Python and its tools for data discovery. You get to know that there are many python tools for Data Exploration: Matplotlib, Seaborn, Pandas, Numpy, Plotly, etc.

Which one should you use? How to use it? This broad availability itself has created confusion. The objective of this Module is to clear that confusion and walk you through Python syntax basics and data exploration tools.

Upon completion of this module, the participant will be able to:

- Run Python codes on Google Colab.
- Understand Python language fundamentals, including basic syntax, variables, and types.
- Create and manipulate different data structures Python can handle, such as Lists, Dictionaries, sets, and Tuples.
- Use Python control and loops statements.
- Define functions in Python and reuse them.
- Use built-in functions in Python such as ZIP, MAP, and lambda.
- Learn about various date time manipulation solutions in Python.
- Read, write and manipulate files in Python.
- Use basic and advanced data analysis tools such as Numpy and Pandas.
- Create informative visualization with Matplotlib and Seaborn.
- Learn how to solve real-world data analysis problems by working on a mini-project.

## PROGRAMME

The goal of this course is to bring you up to speed with Python as quickly as possible so you can build programs that work—basic functions, file handling, and data exploration—while developing a foundation in programming that will serve you well in your workplace.

Python with Google Colab module is for anyone including who have never before programmed in Python.

This course is for those who want to learn the basics of programming quickly to focus on exciting projects and those who like to test their understanding of new concepts by solving meaningful problems.

### Fundamentals

- Basic programming concepts you need to know to write Python programs.
- Basic data types (Containers, Lists, Dictionaries, Sets, Tuples).
- Define functions.

### Data visualization

- Data visualization using Matplotlib, and Seaborn.

### Mini Project

- Strengthening the delivered concepts through application to a relevant mini-project

### Data Exploration

- Data exploration using Numpy and Pandas

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