



# Introduction to Python for Mining Geoscientists

This course is an introduction to the use of Python for geoscientists, emphasizing on statistical analysis and graphical displays using practical examples from the mining industry.

**Duration:** 3 to 4 days.

**Who should attend:** Resource Geologists, Mine Geologists, Rock Geologists, Mine Engineers and anyone working with drillholes, block models and any other spatial data.

**Pre-requisites:** No background in coding is required.

**Objectives:** Get an understanding of what can be done using Python for geological data validation, modeling and reporting.

At the end of the training, participants will be able to :

- Setup a Python environment from scratch
- Understand basic coding in Python
- Import points, grids, drillholes or wireframes in Python
- Put data into custom graphics
- Write procedures to automate tasks

# Agenda

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## Day 1 & 2: Discovering Python

- Python environment installation
- Introduction to Jupyter notebook and alternatives
- Overview of useful Python libraries and illustrations
- Python coding basics:
  - Importing functions
  - Variables types
  - Loops “for/while”
  - List management, dictionary and tuples
  - Reading Python library documentation

## Day 3: Focus on Data Preparation & EDA

- Data loading, filtering, cleaning and visualization
- Use of key Python libraries in geoscience
  - Pandas, Matplotlib, Plotly, Seaborn libraries
- Exercises on mining datasets

## Day 4: Python on your Data (Optional)

This session is performed on trainee’s data.

The objective is to create a Python application bringing immediate value to existing processes and workflows. It allows participants to consolidate their learnings and use freshly acquired skills to solve actual issues.