



## METADATA

**Title:** An introduction to Python for Mining & other Engineers

**Other Titles:** -

**Language:** Greek

**Authors:** Panagiotou, G., Professor, NTUA

**ISBN:** 978-618-5667-71-9

**Subject:** MATHEMATICS AND COMPUTER SCIENCE, ENGINEERING AND TECHNOLOGY

**Keywords:** Programming Techniques / Engineering Mathematics / Engineering Statistics / Data Processing / Linear Programming

**Bibliographic Reference:** Panagiotou, G. (2022). An introduction to Python for Mining & other Engineers [Undergraduate textbook]. Kallipos, Open Academic Editions. <http://dx.doi.org/10.57713/kallipos-99>

### Abstract

The purpose of the book is to teach the Python programming language through the development of programs that solve real engineering problems, particularly in the field of Mining Engineering. The book is aimed at both the first-year student and the practicing engineer; no previous computer programming experience is necessary, although it is welcome. In the first part of the book (Chapters 02 to 10), the introduction to Python programming techniques is step-by-step, following the steps to be taken to solve a real-world mining problem by writing piece by piece the code of a Python program to be developed for this purpose. The second part of the book (Chapters 11 to 20) is dealing with independent engineering subjects and aims to expand the reader's knowledge, with additional elements of the Python language and programming techniques

and, mainly, with the use of specialized Python libraries, internal and external (third-party). Some of these subjects are of general interest, such as solving equations, systems of equations, differential equations and integrals, or the development of the graphical user interface (GUI) of a program. However, there are also Chapters dealing with specialized subjects, such as data processing resulting from measurements of quantities, optimization and linear programming, project management and systems simulation. These subjects are, mainly, for the interest of students, who are taking the relevant courses during their studies, or the engineers, who want to apply them in practice. The last Chapter of the book enables the reader to turn his computer into a virtual piano and compose his own music with the help of Python.

