

Master Finance

Financial software

Responsable	Descriptions	Informations
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LANGUE(S) D'ENSEIGNEMENT

Anglais

CONTENU

1) Goals:

This course aims at introducing students without Computer Science background to programming, algorithms, data structures, Big Data and Financial Data Science. The programming language employed during these lectures is Python.

2) Course outline:

- Programming 101
- o The "why this?" question
- o Understanding concepts: algorithms, algorithmics, programming language, program vs. algorithm
- o Python
- o Variables
- o Operators
- o Printing
- o Input
 - Python2
- o Reading from files
- o Writing to files
- o Lists
 - Python3
- o List comprehension
- o Loops
- o Comparisons
 - Python4
- o Tests: definition, types, multiple tests
- o Modules: Import, help, sys, os
 - Python5
- o Dictionaries and tuples
- o Functions: principles, definitions, argument passing
- o numpy: presentation, useful functions

COMPÉTENCES À ACQUÉRIR

- Understand the usefulness of programming
- Understand the algorithmic thinking

- Learn how to build an algorithm
- Learn python programming
- Python tricks for data science (Big Data)
- Learn how to self-improve the programming/development skill set

MODALITÉS D'ORGANISATION

- Interactive lectures with broad discussions on examples
- Exercises
- Small projects related to finance
- Evaluation: written exam (70%) and projects (30%)

BIBLIOGRAPHIE, LECTURES RECOMMANDÉES

- "Introduction to Algorithms" (1989) by Thomas H. Cormen, Charles E. Leiserson, Roland L. Rivest and Clifford Stein.
- "The Algorithm Design Manual" (1997) by Steven S. Skiena
- "Think Python" (2012) by Allen B. Downey
- "Learning Data Mining with Python" (2015) by Robert Layton

PRÉREQUIS RECOMMANDÉS

- Basic notions of programming and algorithms
- Basic knowledge of operating systems (Windows, Linux)
- Data structures
- Another programming language (R, C, Java, etc.)

VOLUME HORAIRE

- Volume total: 30 heures
- Cours magistraux: 30 heures

CODES APOGÉE

- BFIC11A [ELP]

M3C

Aucune donnée M3C trouvée

POUR PLUS D'INFORMATIONS

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