

# Operations Research

## 01. Orientation and Introduction

# 課程內容

- Convex Optimization
  - Convexity and Duality
  - Selected Algorithms
- Linear Programming
  - Various Applications
  - Simplex Method
- Sequential Decision Problems
  - Dynamic Programming
  - Reinforcement Learning
- Jupyter Notebook: Markdown &  $\text{\LaTeX}$
- Intermediate Scientific Python
- CVXPY & Applications (能否帶可執行計算之筆電來上課?)

# Learning Python: Curated Resource List

- Novice
  - [Bell \(2018\)](#); [Lubanovic \(2020\)](#); [Matthes \(2023\)](#)
- Intermediate to Advanced
  - [Ramalho \(2022\)](#); [Martelli et al. \(2023\)](#); [Beazley \(2009\)](#); [Beazley and Jones \(2013\)](#); [Beazley \(2022\)](#); [Slatkin \(2020\)](#)
- High Performance Computing
  - [Gorelick and Ozsvald \(2020\)](#); [Antão \(2023\)](#)
- Miscellaneous
  - [Lerner \(2020\)](#)
  - [Comprehensive Python Cheat Sheet](#)
  - [Nicholas P. Rougier](#)
    - \* [From Python to NumPy](#)
    - \* [Scientific & Visualization: Python & Matplotlib](#)

# References

Antão, T., 2023. Fast Python. Shelter Island, NY, Manning Publications.

Beazley, D., 2009. Python: Essential Reference. 4th ed., Addison-Wesley, Upper Saddle River, NJ.

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Bell, A., 2018. Get Programming: Learn to Code with Python. Shelter Island, NY, Manning Publications.

Gorelick, M., Ozsvald, I., 2020. High Performance Python: Practical Performant Programming for Humans. 2nd ed., O'Reilly Media, Sebastopol, CA.

- Lerner, R.M., 2020. Python Workout: 50 Ten-Minute Exercises. Shelter Island, NY, Manning Publications.
- Lubanovic, B., 2020. Introducing Python: Modern Computing in Simple Packages. 2nd ed., O'Reilly Media, Sebastopol, CA.
- Martelli, A., Ravenscroft, A., Holden, S., McGuire, P., 2023. Python in a Nutshell: A Desktop Quick Reference. 4th ed., O'Reilly Media, Sebastopol, CA.
- Matthes, E., 2023. Python Crash Course: A Hands-On, Project Based Introduction to Programming. 3rd ed., No Starch Press, San Francisco, CA.
- Ramalho, L., 2022. Fluent Python: Clear, Concise, and Effective Programming. 2nd ed., O'Reilly Media, Sebastopol, CA.
- Slatkin, B., 2020. Effective Python: 90 Specific Ways to Write Better Python. Addison-Wesley, Boston.