

## ISM: Intro to Programming with Python

UGRA\_004793

Departments	Data, Analytics, Technology and Artificial Intelligence (DATA), Dept. of Operations, Innovation & Data Sciences
Teaching Languages	English
ECTS	2
Teacher responsible	Vladimir Manaev - vladimir.manaev@esade.edu

### Bibliography

Lutz.M, Learning Python: Powerful object-oriented programming (6th ed.). O'Reilly Media., O'Reilly Media., 978-1098171308 (Book)

Downey, A. B., 2024., Think Python: How to think like a computer scientist. 3rd ed. Sebastopol, CA: O'Reilly Media, O'Reilly Media, 978-1098155438 (Book)

### Activities

In-class discussions and debates  
Participation

Project development and presentation  
Group project  
Individual final project

### Content

#	Topic
1	Intro to Python. Basic data types. Hints and tricks.
2	Intro to Pandas.
3	Basics of data cleaning in Python.
4	Leveraging Math: use of sympy, numpy, and scipy for the math computations.
5	Descriptive statistics in Python.
6	Advanced topics. Intro to data science methods (regression and non-linear methods). If time allows.

### Assessment

Tool	Assessment tool	Category	Weight %
Final individual project	Final individual project defense	Ordinary round	50.00%
Group project	Midterm group project	Ordinary round	40.00%
Participation in program activities	Class participation	Ordinary round	10.00%

## PROGRAMS

GBD20-Double Degree in Business Administration and Law (Undergraduates: Law)

GBD20 Year 3 (Optative)

GBD20 Year 1 (Optative)

GBD20 Year 4 (Optative)

GBD20 Year 2 (Optative)

GBD20 Year 5 (Optative)

GBD23-Double Degree in Business Administration and Law (Undergraduates: Law)

GBD23 Year 3 (Optative)

GBD23 Year 1 (Optative)

GBD23 Year 4 (Optative)

GBD23 Year 2 (Optative)

GBD23 Year 5 (Optative)

GBD25-Double Degree in Business Administration and Law (Undergraduates: Law)

GBD25 Year 3 (Optative)

GBD25 Year 1 (Optative)

GBD25 Year 4 (Optative)

GBD25 Year 2 (Optative)

GBD25 Year 5 (Optative)

GDL20-Double Degree in Law and Global Governance, Economics and Legal Order (Undergraduates: Law)

GDL20 Year 3 (Optative)

GDL20 Year 1 (Optative)

GDL20 Year 4 (Optative)

GDL20 Year 2 (Optative)

GDL20 Year 5 (Optative)

GDL23-Double Degree in Law and Global Governance, Economics and Legal Order (Undergraduates: Law)

GDL23 Year 3 (Optative)

GDL23 Year 1 (Optative)

GDL23 Year 4 (Optative)

GDL23 Year 2 (Optative)

GDL23 Year 5 (Optative)

GDL25-Double Degree in Law and Global Governance, Economics and Legal Order (Undergraduates: Law)

GDL25 Year 3 (Optative)

GDL25 Year 1 (Optative)

GDL25 Year 4 (Optative)

GDL25 Year 2 (Optative)

GDL25 Year 5 (Optative)

GED20-Bachelor in Law (Undergraduates: Law)

GED20 Year 3 (Optative)

GED20 Year 1 (Optative)

GED20 Year 4 (Optative)

GED20 Year 2 (Optative)

GED25-Bachelor in Law (Undergraduates: Law)

GED25 Year 3 (Optative)

GED25 Year 1 (Optative)

GED25 Year 4 (Optative)

GED25 Year 2 (Optative)

GEL19-Bachelor of Global Governance, Economics and Legal Order (Undergraduates: Law)

GEL19 Year 4 (Optative)

GEL19 Year 2 (Optative)

GEL19 Year 3 (Optative)

GEL19 Year 1 (Optative)

GEL23-Bachelor of Global Governance, Economics and Legal Order (Undergraduates: Law)

GEL23 Year 2 (Optative)

GEL23 Year 3 (Optative)

GEL23 Year 1 (Optative)

GEL23 Year 4 (Optative)

GEL25-Bachelor of Global Governance, Economics and Legal Order (Undergraduates: Law)

GEL25 Year 4 (Optative)

GEL25 Year 2 (Optative)

GEL25 Year 3 (Optative)

GEL25 Year 1 (Optative)