

Algorithmic Thinking & Programming

UGRA_016396

Departments	Data, Analytics, Technology and Artificial Intelligence (DATA), Dept. of Operations, Innovation & Data Sciences
Teaching Languages	English, Spanish, Catalan
ECTS	6
Teacher responsible	Jordi Tarda Valls - jordi.tarda@esade.edu

Course Goals	The course aims for Business Administration students to understand the fundamentals of algorithmic logic and its application in problem-solving. Additionally, it seeks to equip them with basic programming skills in Python, focusing on data manipulation and automation of administrative tasks. Finally, the course aims to develop critical thinking and analytical skills to enhance data-driven decision-making.
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Previous knowledge	No previous programming knowledge required
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Prerequisites	There are no prerequisites for this course.
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Description

Course contribution to program	A course in algorithmics and Python programming can significantly enhance a Business Administration career by providing tools for data analysis and management, automation of accounting and financial processes, and optimization of operations. It facilitates the understanding and application of statistics in market studies and financial analysis, improves the management of information systems, and supports data-driven decision-making across all areas, from marketing to business sociology.
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Short description	In this course, participants will develop algorithmic thinking capabilities that enable them to navigate complex problems. In particular, participants will build a core foundation in algorithmic thinking, the Python programming language and how to use it for data analysis.
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Program Learning Objectives

BBA25-Bachelor of

Business

Administration (BBA)

- Critical and Analytical Thinking

- Apply data analysis as an integral part of the evaluation and decision-making process.

- Technological Savviness

- Identify the role technology plays in society and the business environment.

Content

#	Topic
1	Introduction - Basic Data Types
2	Conditionals & Loops
3	Lists & Dictionaries
4	Functions
5	The Pandas & Matplotlib Library

Assessment

Tool	Assessment tool	Category	Weight %
Quizzes/tests	Individual quizzes	Retake and ordinary round	15.00%
Individual or team exercises	Team work	Retake and ordinary round	15.00%
Group project	Final project	Retake and ordinary round	25.00%
Written and/or oral exams	Final exam	Retake and ordinary round	45.00%

PROGRAMS

BBA20-Bachelor of Business Administration (BBA) (Undergraduates: Business)

BBA20 Year 1 (Mandatory)

BBA25-Bachelor of Business Administration (BBA) (Undergraduates: Business)

BBA25 Year 1 (Mandatory)

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

GBD25 Year 1 (Mandatory)

GBL25-Double Degree in Business Administration and Global Governance, Economics and Legal Order (Undergraduates: Business)

GBL25 Year 1 (Mandatory)