



Faculty of

Electrical and Computer Engineering

Data Science and Artificial Intelligence Program

MODE

HYBRID

ONLINE

RPC-SO-50-No.837-2023

espol[®]

Bachelor in Data Science and Artificial Intelligence



Mode

The program is offered in two modalities:

- ▶ **Online**
The entire program is delivered virtually.
- ▶ **Hybrid**
The first four semesters of the program are conducted in person, and the last four semesters are delivered virtually.



Professional skills

The Data Science and Artificial Intelligence bachelor can apply methods, techniques, and procedures to solve a wide range of situations in the practice of their profession, with the ability to adapt to change and to carry out their duties with the following skills:

- ▶ Manage large-scale data analysis projects.
- ▶ Analyze, design, and implement software applications and data-driven solutions.
- ▶ Develop data-based technological solutions using cutting-edge cloud services, applying algorithm optimization and ensuring information security.
- ▶ Optimize and implement machine learning algorithms.



Employability

The Data Science and Artificial Intelligence bachelor can work as:

- ▶ Entrepreneur.
- ▶ Big Data Analyst.
- ▶ Data-driven applications developer.
- ▶ Data Engineer or Machine Learning Engineer.
- ▶ Analytics or Data Science Department Director.
- ▶ Data-driven or AI-based systems and technological projects advisor or consultant.
- ▶ Data-based or artificial intelligence systems auditor.

Curriculum Structure

LEVEL 100 - I

PROBLEM SOLVING

SINGLE VARIABLE
CALCULUS

LINEAR ALGEBRA

HUMANITIES
ELECTIVE
COURSES

PROGRAMMING
FUNDAMENTALS

ENGLISH I

LEVEL 100 - II

DATABASE
SYSTEMS

VECTOR CALCULUS

ARTS, SPORTS AND
LANGUAGES
ELECTIVE COURSES

INTRODUCTION TO
DATA SCIENCE AND
ARTIFICIAL
INTELLIGENCE

OBJECT ORIENTED
PROGRAMMING

ENGLISH II

LEVEL 200 - I

DATA STRUCTURES

STATISTICS I

HUMAN COMPUTER
INTERACTION

COMMUNICATION

MACHINE LEARNING

ENGLISH III

LEVEL 200 - II

ANALYSIS OF
ALGORITHMS

WEB AND MOBILE
APPLICATIONS
DEVELOPMENT

SOFTWARE
ENGINEERING I

OPTIMIZATION
ALGORITHMS

STATISTICS II

ENGLISH IV

LEVEL 300 - I

ENTREPRENEURSHIP AND INNOVATION

INFORMATION VISUALIZATION

DATA AND FORECASTING

ETHICS IN DATA SCIENCE AND INTELLIGENT SYSTEMS

ARTIFICIAL INTELLIGENCE

ENGLISH V

LEVEL 300 - II

DISTRIBUTED SYSTEMS AND CLOUD COMPUTING

SUSTAINABILITY SCIENCE

INFORMATION SECURITY

DATA STRATEGY

DEEP LEARNING

COMMUNITY SERVICE INTERSHIPS

LEVEL 400 - I

SMART ENVIRONMENTS

MACHINE LEARNING SYSTEMS

ADVANCED DATABASE

NATURAL LANGUAGE PROCESSING

SELECTED ELECTIVE COURSE

LEVEL 400 - II

PRE-PROFESSIONAL BUSINESS INTERSHIPS

MATERIA INTEGRADORA DE CIENCIA DE DATOS E INTELIGENCIA ARTIFICIAL

SELECTED ELECTIVE COURSE



By the way...

The World Economic Forum recognizes Data Science and Artificial Intelligence specialists as one of the professions of the future. This program trains professionals capable of designing Machine Learning models based on Artificial Intelligence to identify patterns in various types of data and generate predictions that support decision-making in the digital transformation processes of industries.



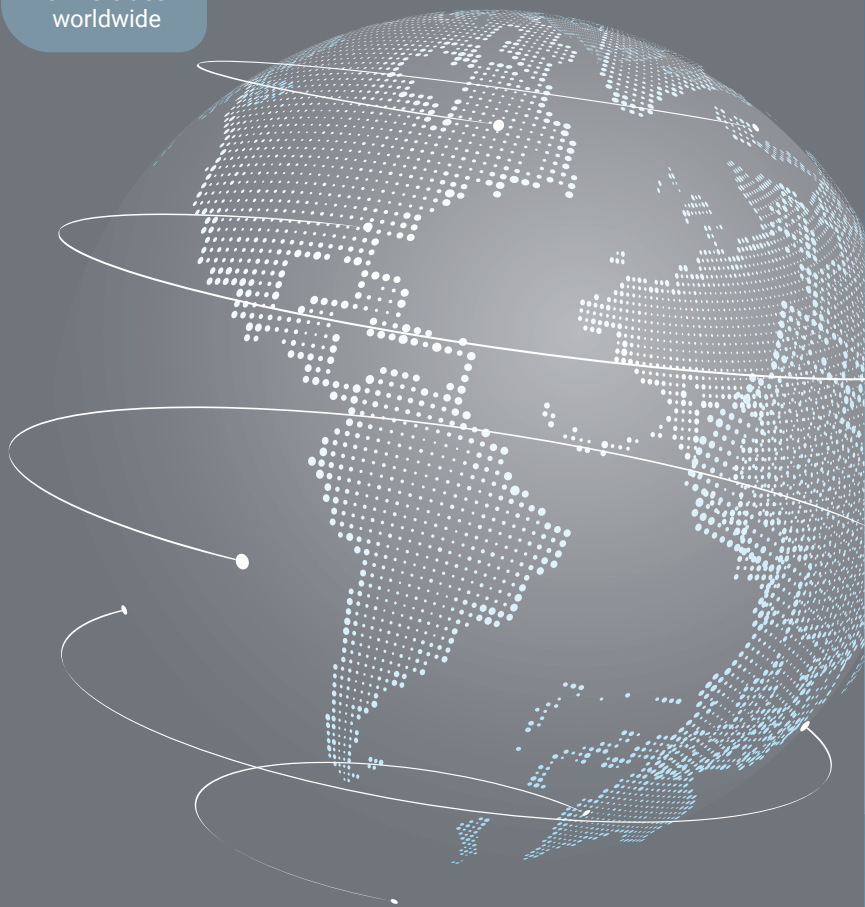
International Relations

ESPOL, through its Foreign Relations Office, promotes and develops partnerships with international cooperation agencies and academic/research institutions, creating mobility opportunities for the entire university community and contributing to the excellence that defines us.

More than 165 agreements allow students to participate in semester- or year-long exchanges, internships, research placements, conferences, competitions, and other academic activities abroad.

106

universities
worldwide





Did you know?

This program aims to train professionals who actively participate in multidisciplinary teams to design and implement data- and AI-based solutions that address the needs of various groups in our society. The Data Science and Artificial Intelligence bachelor is capable of managing, analyzing, designing, and implementing technological solutions based on data and machine learning algorithms.

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