

The background of the slide features a blurred image of several people, including a man and a woman, working at a row of computer monitors in what appears to be a laboratory or office setting. The monitors display various AI-related visualizations, such as a human figure with glowing blue energy points, a colorful abstract pattern, and a profile of a head with neural network connections. The overall atmosphere is professional and tech-oriented.

Faculty of
**Electrical and Computer
Engineering**

Data Science and Artificial Intelligence Engineering

RPC-SO-50-No.837-2023

espol[®]

Bachelor of Science in Data Science and Artificial Intelligence



Applicant Profile

Applicants are expected to be curious, imaginative, creative, and innovative, with basic knowledge of computing, mathematics, and English. They should demonstrate willingness to work in teams and solve problems. In addition, they should stand out for their abilities in abstraction, analysis, synthesis, and logical reasoning.



Professional Skills

A Data Science and Artificial Intelligence Engineer designs, implements, and manages solutions based on large volumes of data and intelligent algorithms for public and private organizations, at national and international levels, demonstrating the ability to:

- ▶ Manage projects involving the analysis of large volumes of data and intelligent algorithms
- ▶ Analyze, design, and implement computer applications based on intelligent algorithms and large volumes of data
- ▶ Optimize algorithms for technological solutions in cloud services involving large volumes of data and intelligent algorithms



Employability

A Data Science and Artificial Intelligence Engineer may hold various strategic roles, such as:

- ▶ Data Scientist
- ▶ Data Engineer or Artificial Intelligence Engineer
- ▶ Application Developer for solutions based on large volumes of data and intelligent algorithms
- ▶ Head or Director of an Analytics/Data Science Department
- ▶ Auditor, advisor, and consultant for the development of systems and projects based on large volumes of data and intelligent algorithms



In fact...

The World Economic Forum recognizes Data Science and Artificial Intelligence specialists among the profiles with the highest outlook and growth in labor demand worldwide.



LEARN MORE



Curriculum

N 100 - I

PROBLEM SOLVING

SINGLE VARIABLE
CALCULUS

LINEAR ALGEBRA

HUMANITIES
ELECTIVE
COURSES

PROGRAMMING
FUNDAMENTALS

ENGLISH I

N 100 - II

DATABASE
SYSTEMS

VECTOR CALCULUS

ARTS, SPORTS AND
LANGUAGES
ELECTIVE COURSES

INTRODUCTION TO
DATA SCIENCE AND
ARTIFICIAL
INTELLIGENCE

OBJECT ORIENTED
PROGRAMMING

ENGLISH II

N 200 - I

DATA STRUCTURES

STATISTICS I

HUMAN COMPUTER
INTERACTION

COMMUNICATION

MACHINE LEARNING

ENGLISH III

N 200 - II

ANALYSIS OF
ALGORITHMS

WEB AND MOBILE
APPLICATION
DEVELOPMENT

SOFTWARE
ENGINEERING I

OPTIMIZATION
ALGORITHMS

STATISTICS II

ENGLISH IV

N 300 - I

ENTREPRENEURSHIP
AND INNOVATION

INFORMATION
VISUALIZATION

DATA AND
FORECASTING

ETHICS IN DATA
SCIENCE AND
INTELLIGENT
SYSTEMS

ARTIFICIAL
INTELLIGENCE

ENGLISH V

N 300 - II

DISTRIBUTED
SYSTEMS AND
CLOUD COMPUTING

SUSTAINABILITY
SCIENCE

INFORMATION
SECURITY

DATA STRATEGY

DEEP LEARNING

COMMUNITY
SERVICE
INTERSHIPS

N 400 - I

SMART
ENVIRONMENTS

MACHINE
LEARNING
SYSTEMS

ADVANCED
DATABASES

NATURAL LANGUAGE
PROCESSING

SELECTED
ELECTIVE
COURSE

N 400 - II

PRE-PROFESSIONAL
BUSINESS
INTERSHIPS

DATA SCIENCE AND
ARTIFICIAL INTELLIGENCE
ENGINEERING CAPSTONE
COURSE

SELECTED
ELECTIVE
COURSE



International Relations

Through its External Relations Office, ESPOL promotes and develops partnerships with international cooperation organizations, academic institutions, and research centers. These partnerships create mobility opportunities for the entire ESPOL community and contribute to the excellence that distinguishes the institution.



Did you know?

Data Science and Artificial Intelligence engineers manipulate and transform large volumes of data to design and implement Machine Learning models that identify patterns across diverse sources and generate predictions that support decision-making in the digital transformation of industries.

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More than 226 international agreements allow students to participate in experiences abroad, including semester or year-long exchange programs, pre-professional internships, research placements, and participation in conferences, competitions, and other academic activities.

