



UNIVERSITÉ  
FRANÇAISE  
D'ÉGYPTÉ



# BACHELOR OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE ENGINEERING

## Overview

The Bachelor of Artificial Intelligence and Data Science Engineering is a 4-year engineering program taught in English. Graduates earn an Egyptian bachelor's degree and have the opportunity to pursue a French master's degree in just one additional year through our French partner universities. It allows students to gain international hands-on experience, with various opportunities of knowledge transfer and exposure. This program provides students with the essential skills to understand, design, develop, and manage intelligent software and data science systems using advanced algorithms in various fields.

## WHY STUDY ARTIFICIAL INTELLIGENCE AND DATA SCIENCE ENGINEERING ?

- Earn an Engineering bachelor's degree in just four years.
- Only one additional year is required to earn a master's degree from one of our partner universities in France, which includes a hands-on internship with a monthly salary at a French company. UFE students enjoy the same status as French nationals.
- Qualify for PhD programs worldwide upon completing the French master's degree.
- Engage in practical experiences and summer internships during your studies, bridging the gap between academic knowledge and real-world skills.
- Experience international exposure through visiting professors, fostering a rich environment for knowledge exchange.
- Benefit from 1-2 semester(s) exchange and summer internship programs with our French partner universities.



| Program duration            | 4 years                                                                                                                                                                                           | European Credits (ECTS) | 240 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----|
| French Partner Universities | University of Haute Alsace, Technological University of Compiègne, Gustave Eiffel University, EFREI Panthéon-Assas University Paris II, CY Cergy Paris University, and CESI School of Engineering |                         |     |
| Faculty within UFE          | Engineering and Architecture                                                                                                                                                                      |                         |     |

## POSSIBLE CAREER PATHS:

-Data Engineer / Data Scientist  
-AI Engineer  
-Machine Learning Engineer

-Data / System Architect  
-NLP Engineer  
-Business Intelligence Analyst

## PROGRAM CONTENTS:

### SEMESTER 1

- Mathematics 1
- Physical Mechanics
- Waves and Electromagnetism
- Introduction to Programming
- Eco Design
- French Language
- English Language

### SEMESTER 2

- Mathematics 2
- Chemistry
- Geometrical Optics
- Logic Design
- Professional Project (Summer Internship)
- Languages Fr & En
- Elective 1

### SEMESTER 3

- Technical Drawing
- Introduction to Applied Mathematics
- Project 1  
Languages Fr & En
- Elective 2
- Software Engineering
- Object-oriented Programming

### SEMESTER 4

- Statistics and Probabilities
- Structure and Physical Properties of Materials
- Thermodynamics 1
- Project 2
- Elective 5
- Algorithms and Data Structures
- Database Systems

### SEMESTER 5

- Advanced Statistics and Probabilities
- Operating Systems
- Artificial Intelligence
- Digital Image Processing and Analysis
- Languages Fr / En
- Elective 8
  - Computer Networks
  - Communication Systems
- Elective 9
  - Project Management
  - Marketing Strategies
  - Monitoring and Quality Control Systems

### SEMESTER 6

- Digital Signal Processing
- Computer Architecture and Organization
- Cloud Computing & IoT
- Machine Learning
- Professional Project (Summer Internship)
- Languages Fr / En
- Elective 10
  - Optimization Techniques
  - Computer Simulation and Modeling
  - Measurement Techniques

### SEMESTER 7

- Computer Graphics
- Neural Networks
- Data Mining
- Voice Recognition and Natural Language Processing
- Graduation Project 1
- Elective 11
  - Deep Learning
  - AI-based Programming
  - Computer Game Theory

### SEMESTER 8

- Evolutionary Algorithms
- Multi-agent Systems
- Probabilistic Modeling and Intelligent Reasoning
- Graduation Project 2
- Legislation
- Elective 12
  - Big Data Analytics
  - Information and Computer Networks Security
  - High Performance Computing

