

Industry 4.0

TAUGHT IN FRENCH



/ AIMS

The engineer involved in the Industry 4.0 has strong skills in embedded systems and robotics, in quality control and in customer support. As leaders in a key issue of digital transformation, ESEO engineers assist industrialists in transforming, innovating and optimising their facilities.

/ ACQUIRED SKILLS

You will be proficient in implementing smart sensors and interconnecting devices. You will also collect, transport, store and use data, and have a thorough grounding in various fields such as robotics and mechatronics, automation and industrial IT as well as in modelling and numerical simulation.

/ CAREER OPPORTUNITIES

You will access positions such as:

- Robotics and Mechatronics Engineer
- Additive Manufacturing Engineer
- Modelling, Simulation & Numerical Optimisation Engineer
- Automation & Industrial IT Engineer
- Energy & Environment Engineer

COURSE UNITS

/ SEMESTER 8

The course is based on 2 main areas:

- A core curriculum including Digital Health and Smart-City majors with a balanced combination of hard sciences, data collection, processing and analysis;
- A 112-hour project related to the major chosen in S9.

Course Units common to all three majors:

- **Industry 4.0 Project:** 112h -10 ECTS
- **Data Science:** 28h - 3 ECTS
- **Instrumentation:** 28h - 2 ECTS
- **Internet of Things:** 28h - 3 ECTS
- **Big Data and Security:** 28h - 3 ECTS - The digital information cycle
- **Artificial Intelligence 1:** 28h - 3 ECTS - Methods and neural networks
- **Augmented Reality / Virtual Reality:** 28h - 2 ECTS
- **English:** 28h - 2 ECTS
- **Transversal Skills:** 28h - 2 ECTS

/ SEMESTER 9

The course is divided into 3 areas:

- A core curriculum with 3 Course Units to cover in depth the various scientific concepts related to collecting, processing, analysing and storing data
- A specific core of 5 Course Units related to the chosen major
- A 168-hour industrial final year project

Course Units common to all three majors:

- **Distributed Infrastructure:** 28h - 2 ECTS - Large scale infrastructures, Quality of Service, Cloud computing
- **Flow Optimisation:** 28h -2 ECTS- Evolutionary Algorithms
- **Efficiency and Environment:** 28h - 2 ECTS- Decision-making tools (Predictive maintenance, diagnostics) / Energy and environment (Energy efficiency, Green IT)

Specific Course Units in Industrie4.0:

- **CAD and Additive Manufacturing:** 28h -2 ECTS
- **Modelling and Digital twin:** 28h -2 ECTS
- **Automatics and Industrial Data Processing:** 28h -2 ECTS
- **Logistics in Industrial Manufacturing:** 28h -2 ECTS
- **Dynamics of Electromechanical Systems:** 28h -2 ECTS
- **Final Year Project:** 168h - 14 ECTS

