

Electrical and Computer Engineering

Embedded computing

Robotics

Microelectronics

Renewable energy

Control Engineering

Embedded systems

Electrical engineering

Communications

OBJECTIVES

This specialization is based on multidisciplinary teaching in the areas of general IT, industrial IT, micro-electronics, automatics and electrotechnics. Engineers from this program are thus multi-skilled engineers and able to change activity during the evolution of their careers to adjust to the imperatives of the market. The autonomy acquired by engineers from this program through project work (self-training) is a quality appreciated in industry.

Along with the scientific and technological knowledge and skills offered by the program, student engineers are also given the opportunity to acquire business-oriented knowledge in the areas of labor law, economics, and management and communications. They also study and use two foreign languages.

PROGRAM

The program is split into two parts:

- > The first three semesters (S5, S6, S7) involve a common core for all students of the program where the main theme is embedded systems: planes, satellites, mobile phones, mobile robots, metros...
- > The last 3 semesters (S8, S9, S10) are devoted to the student's specialization and involve two courses:
 - Smart communicating systems: this course focuses on mobile phones and wireless networks,
 - Autonomous embedded systems: this course focuses on mobile robots and their energy management.

LINKS WITH RESEARCH

Student engineers from this program are trained through research, allowing them to benefit from state-of-the-art knowledge. The lecturers of the « Electrical and Computer Engineering » department carry out their research projects within the laboratories of Lille 1 University, which are associated with the school in the following areas:

- Fundamental computing (LIFL)
- Microelectronics and nanotechnologies (IEMN)
- Control engineering, computing and signals (LAGIS)
- Electrotechnics and power electronics (LEEP)

MAIN PROFESSIONS OPEN TO NEW GRADUATES

Employment prospects are extremely varied and concern all sectors.

Some examples:

- > Project manager: manages a project and ensures it is carried out properly.
- > Design engineer: coordinates studies linked to the development of new products, where the formal specifications of these products are drawn up in a document that lays out their characteristics. She /he is responsible for realising the project, creating prototypes, as well as testing and controlling the different components.
- > Research and development engineer: within the context of an innovation project, participates in the design and development of new products, services or procedures.

SECTORS OF ACTIVITY AND COMPANIES

Given the broad nature of this program, graduates join professions in all sectors of the economy. Engineers from the « Electrical and Computer Engineering » department can be found in:

- > major companies in the transport sector (TOYOTA, PEUGEOT, RENAULT, ALSTOM, THALES, RAIL SIGNALING, AVIONICS, VALEO,...),
- > major companies in the area of research, design and installation (SIEMENS, EDF, ALCATEL, SCHNEIDER ELECTRIC, SPIE, CEGELEC, STMICROELECTRONIQUE),
- > IT services companies (CAP GEMINI, LOGICA, ATOS ORIGIN, SOPRA,...)