

University Bachelor of Technology (B.U.T.)

# Chemistry

Chemistry is the **science of matter, of its composition and its transformations**. Chemistry is present in companies, irrespective of their size and their line of business: it is used in the chemical, perfume and pharmaceutical industries, in cosmetics, packaging, agribusiness, aeronautics, the automotive industry, electronics, energy, water, soil and air treatment, surface treatment, nuclear energy, counterfeiting, etc. Chemistry has the wonderful capacity to transform matter so as to provide the right amount and quality of the products according to public demand. This double scientific and industrial character generates diversity. **B.U.T. Chemistry** graduates are trained and skilled in analysis, synthesis, material properties, formulated products and processes which complement each other.

## Study tracks

### • Analysis, quality-control, environment:

Graduates will be able to carry out every step of an analytical process, from sampling and product pre-treatment through to the implementation of the analytical method, optimisation and validation.

**Career prospects:** Quality control technician in all types of industries, waste processing technician, quality technician in industry (pharmaceuticals, food processing, materials, cosmetics...), assistant of R&D engineers in a university research laboratory or in industry

### • Synthesis:

Graduates will master the various methods of synthesis, purification and characterisation of organic or inorganic compounds, the setting up of a synthetic route and implementation of the experimental protocol (multi-stage synthesis, separation techniques for product purification, micromanipulation and gram-scale experiments, catalysis) in organic and/or inorganic chemistry.

**Career prospects:** Technician in organic synthesis, R&D technician in organic or inorganic chemistry, industrial development technician, production supervisor in fine chemistry, production technician in fine chemistry, R&D engineer's technical assistant, technical writer in organic or inorganic chemistry

### • Materials and formulated products:

Graduates will be able to carry out every stage of the processing of materials or formulated products: from the selection of raw materials through to conception, product identification and physico-chemical characterisation of materials and end products.

**Career prospects:** Technical assistant to an R&D engineer in materials and formulated products, R&D metallurgy technician, compliance technician in materials or formulated products, workshop manager in materials, ceramic manufacturing technician, glass manufacturing or processing technician, metal production technician, rubber or plastic production technician, dye technician in industry or R&D, surface treatment technician

### • Industrial Chemistry:

Applied to development and production lines: graduates will be at the interface between their laboratory and production. They will carry out the processing of test results for manufacturing

processes, they will monitor analytical equipment in production and optimise analytical methods related to the process. Thanks to their skills in process engineering, they will ensure the good running of manufacturing units, from laboratory to the production line, via the pilot plant, according to established procedures.

**Career prospects:** Technical Assistant to an R&D or process design engineer, online compliance technician, environmental compliance inspector, assistant of the process development laboratory manager, manufacturing and methods technician (process automation), production technician in the chemical, pharmaceutical, cosmetics and perfume industry

## Skills

The purpose of this training course is to develop 6 skills among students. These skills rely on items called key components enabling them to apply their knowledge to real-life situations. In addition to the 4 core activity skills related to the study tracks (**Analysing, Synthesising, Formulating, Producing**), competency modules such as **'Managing'** and **'Controlling'** equip students to develop their knowledge in safety, quality, technological watch, sustainable development, English...

## Entry requirements

The B.U.T. in Chemistry is open to high school graduates from **general or technological backgrounds** or to those changing study path.

Admission is based upon examination of academic records. When considering applications, some departments might require an interview. The B.U.T. can also be prepared within the Lifelong education scheme or on a vocational basis (apprenticeship training or work-based learning). The diploma can also be delivered on Accreditation of Prior Experiential Learning (APEL).

