

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

Materials Science and Engineering (SGM)

The aim of the **Bachelor of Technology in Materials Science and Engineering** is to train future specialists in materials (metals, polymers, glass, ceramics, composites and agro-materials).

Our society is in constant need for new equipment, devices, materials, etc, with ever greater performance, abiding by cost-saving and environmentally-friendly demands. This requires expertise in design, elaboration, use but also recycling or re-use. Optimising resources and implementing sustainable development have indeed become key challenges of the 21st century. It appears thus essential to train intermediate executives who can adapt and suggest innovative alternatives, to meet such expectations from the industry but also from society. The B.U.T. SGM course is offered on the French territory. Three optional study tracks are proposed.

Study tracks

• Materials recycling and recovery:

This study track is more specifically dedicated to the recovery of materials at the end of their lifecycle.

Graduates will be able to contribute to implementing a specific approach in this field.

Career prospects:

Job options are included in these fields:

- Recycling of all families of materials (polymers, glass ...)
- Recovery of materials (manufacturing waste or residues) in a waste collection firm or in a research and development department
- Design (developing products or materials)
- Analysis of the life cycle of materials and products

• Materials and products engineering:

This study track equips students to set up processes starting with the selection and the design of materials until the final product's achievement. These processes are elaborated within a sustainable development framework.

Career prospects:

Job options are included in these fields:

- Design office (product design, modelling and prototyping)
- Production engineering department (expertise according to processed materials)
- Production within a production workshop (industrialisation, methods, manufacturing, process control, process research)
- Business (technical-sales specialisation)
- Prototyping

• Materials and products characterisation and expertise:

This study track aims at training graduates who will be able to implement the most suitable analysis techniques so as to ensure the product's compliance with the specification, and to establish links between the manufacturing parameters and the properties of the product.

Career prospects:

Job options are included in these fields:

- Lab technician (materials characterisation) within a research lab, either in the production department or in the design one)
- Quality control (materials and products QC)
- Research in materials
- Expert in a control department
- NDT (Non-Destructive Testing)

Skills

The SGM B.U.T. training course equips students with four core skills:

- **Planning**
- **Eco-designing**
- **Materials shaping**
- **Materials and products characterisation**

Entry requirements

The B.U.T. in Materials Science and Engineering is open to high school graduates from **general, technological or vocational 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).

B.U.T. Materials Science and Engineering in France

