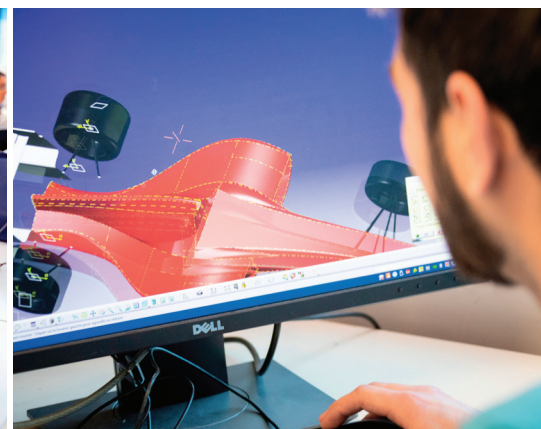
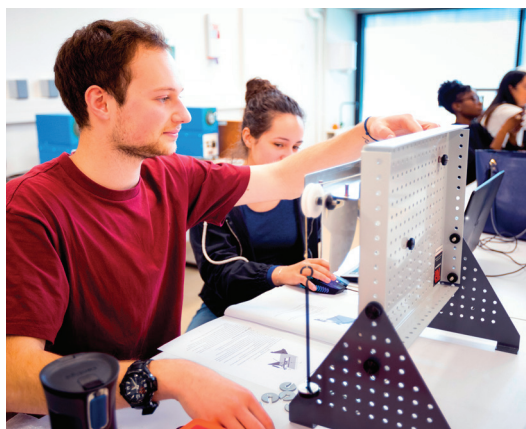


MATERIALS MECHANICS & ENERGY



Our lecturers, who come from the world of research and business, are experts in teaching advanced technologies.

In addition, our students benefit from a work placement (or exchange) abroad: at least 12 weeks for students and 8 for apprentices.

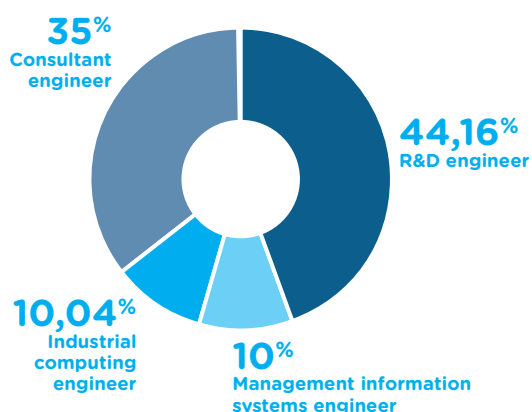
AREAS OF TRAINING

- Materials for mechanical structures (metals and alloys), metallurgy.
- Shaping, assembly and durability of structures.
- Computer aided design, finite element modelling.
- Polymers and composites.
- Materials for energy (nuclear, hydrogen) and sustainable development.
- Materials for photovoltaics and nanotechnology.

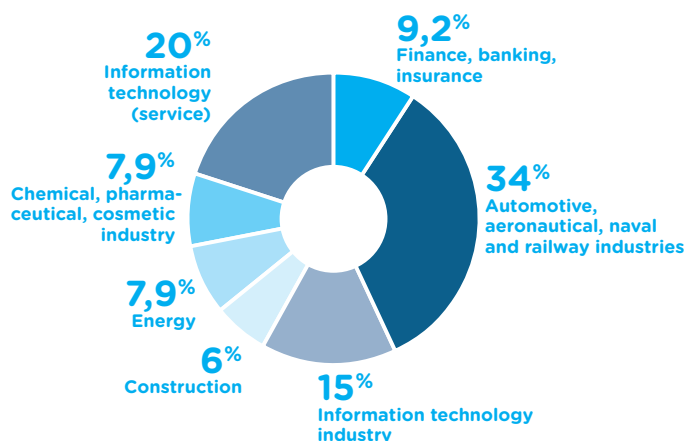
AREAS OF APPLICATION

- Mechanical behaviour of materials.
- Materials for energy.
- Finite element simulation.
- Composite materials and polymers.
- Sustainable development.
- Functional materials.

SCHOOL'S FIGURES FOR INTEGRATION INTO THE WORKPLACE GRADUATES' OCCUPATIONS*



AREAS OF ACTIVITY*



PERCENTAGE EMPLOYED

Since 2017, over 90% in employment within 6 months of graduating.

*From the 3-year average of the professional integration surveys.

MATERIALS MECHANICS & ENERGY

THE MAIN COURSES

Apprentices

Years 1 2 3

- **Languages and communication**
English, a second foreign language, theory and practice of communication.

- **Professional project and professional integration**

- **Management of projects, information, people and economic factors**
Economics, strategy, marketing, project management, cost management, business games, law, sustainable development, entrepreneurship, business creation, human resources management, Innovation management:

- **Basic sciences**
Analysis, probability, electromagnetic waves, engineering physics.

- **Computer Science**
Databases, algorithms, C project, UML.

- **Structure of materials**
Structure of matter, structure of polymers, electronic structure of matter, chemical bonding thermodynamics of materials.

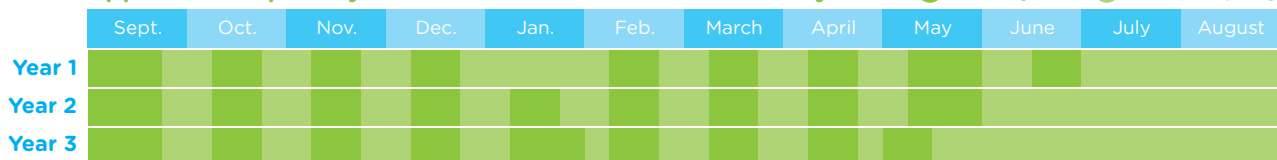
- **Material mechanics**
Strength of materials, finite element method, experimental methods in mechanics, microstructure-property relationship, fracture mechanics.

- **Technological and industrial challenges in materials science**
Magnetic properties of materials, materials and radiation, materials for microelectronics, materials for energy, materials for structures, metallurgy, corrosion of materials, polymers and plastics, heat treatment.

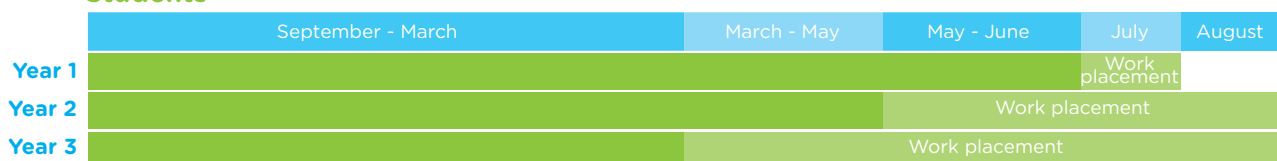
- **Projects**
3 large projects in the final year: 'Engineer's Minute', 'Materials Engineering' and 'No stress, the films are secure'.

THE ENGINEERING CYCLE TIMETABLE AT POLYTECH PARIS-SACLAY

Apprenticeship in 3 years and continued education in 2 years. ● At Polytech ● In a company



Students



Our students benefit from an international work placement (or exchange) with our partners (12 weeks for students and 8 for apprentices).

Contacts

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