



MAT



The Materials specialization (MAT) is a Master's-level program that trains generalist engineers for developing, elaborating, characterizing, transforming, and using materials. The program also raises their awareness regarding eco-design and sustainable development.

KEYWORDS

**LIFE CYCLE ANALYSIS – CERAMICS – SUSTAINABILITY – ECO-DESIGN – MATERIALS
BIO-SOURCING – COMPOSITE MATERIALS – MECHANICS – METALS – CHEMICAL PHYSICS – POLYMERS – RECYCLING – GLASS**

ALL OF POLYTECH'S PROGRAMS LEVERAGE A SOLID PARTNERSHIP NETWORK WITH:

- The industrial world (800 internships, 200 industry projects, and 50 apprenticeship contracts per year)
- Academic research (14 associated research laboratories)
- International partners (over 100 partner universities around the world)

SPECIALIZATION IN 4th YEAR

Starting in their 4th year, MAT students may specialize in:

- Chemical physics of materials
- Mechanics of materials

Core classes common to both options are nonetheless important in 4th and 5th years.

TARGET PROFESSIONS

When MAT engineering students graduate:

- they have acquired a solid scientific foundation in chemistry, physics, and mechanics.
- they possess strong knowledge of the technologies specific to each class of materials (polymers, glass, ceramics, metals...).
- they are able to handle technical, human, and economic aspects of projects and activities in the field of widely-used and high value-added materials.
- they are aware of sustainability, recycling, and eco-design issues.

Graduates are qualified for many jobs:

- Research and development
- Design
- Trials and studies
- Quality and standardization
- Production
- Auditing and technical consulting
- Maintenance

TARGET ACTIVITY SECTORS

- **Companies developing materials:** chemical-plastics and composites, glass industry, ceramics, metal-work...
- **Companies implementing materials:** aeronautics and space, automobile construction, transport materials, mechanical construction, energy, microelectronics, biomedical...

MAIN PROGRAM TOPICS

- mathematics
- physics
- chemistry
- mechanics
- materials (elaboration, properties, characterization, behavior, and modeling)
- eco-design and sustainability
- statistics
- computer science
- human and social sciences
- modern languages

A complete list of courses offered at POLYTECH, and total hours, is available on www.polytech-montpellier.fr

PROJECTS AND INTERSHIPS

Engineering students participate in several internships with companies or research laboratories:

- 1 month internship at the end of the 3rd year
- 3-4 months internship at the end of the 4th year
- 5-6 months internship at the end of the 5th year

5th year students perform an industry project at the end of their studies (240 hours), which places them in a professional context and helps establish their independence.

"MAT" GRADUATES

Philippe Adell, Researcher, NASA (MAT 1999)

Philippe Marx, Creator of AMF - Shape-memory alloy (MAT 1988)

Xavier Orhac, Sales & Marketing Director EMEA, Saint-Gobain Abrasifs (MAT 1994)

ADMISSION REQUIREMENTS

3rd year

→ For students in preparatory classes at higher education establishments: recruitment via Polytech competition.

→ For holders of L2, L3, DUT, BTS, or equivalent foreign diploma: competition via written application and interview.

→ For PeiP2 students (Polytech engineering schools program): after curriculum validation and national ranking.

4th year

For holders of an M1 degree or equivalent foreign degree: competition via written application and interview.

Vocational contracts

Students accepted to initial education may complete their 5th year with a vocational contract.

Continued education

The Materials program is also available as continued education under some conditions, for employees who can demonstrate at least three years of professional experience related to this specialization.

www.polytech-admission.org

TECHNOLOGY HALL

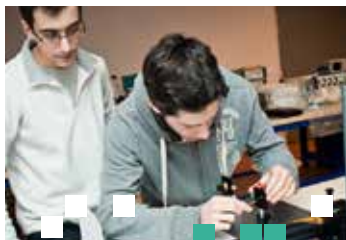
The school offers a technology hall, equipped with specific cutting-edge materials that students in the Materials program use for their practical exercises and projects.

■ *Equipment for elaborating and adapting materials: oven, shaker, press, polisher, cutting machine, heat chamber...*

■ *Materials characterization tools: microscope, granulometer, spectrometer, dilatometer, thermogravimeter and calorimetry analysis, chomatograph, rheometer, traction machine, extensometer, refractometer...*

TO FIND OUT MORE +

More information regarding the number of ECTS, course descriptions, research partnerships, and international opportunities on: www.polytech-montpellier.fr.



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