

# PROCESSES AND POLYMERS



Plastics are everywhere. This fast-moving industry based on innovation and new markets faces new challenges such as energy efficient processes, bioplastics manufacturing and the environmental impact of plastics. This industry looks for talents to adapt to these new trends. Our Processes and Polymers program offers skills for the petrochemical and polymer industry, in a multicultural environment: a recognized Master program where you will embrace a sector where innovation knows no bounds!

# LES POINTS CLÉS DU CURSUS

From process to product

Field internships in Europe

International / multicultural

# LES DÉBOUCHÉS POUR LE PROGRAMME

36%

Petrochemicals

7%

Polymers/Plasturgy

33%

Project engineering

4%

PhD

16%

Refining

4%

Others

# PROGRAMME & CALENDRIER

## Program

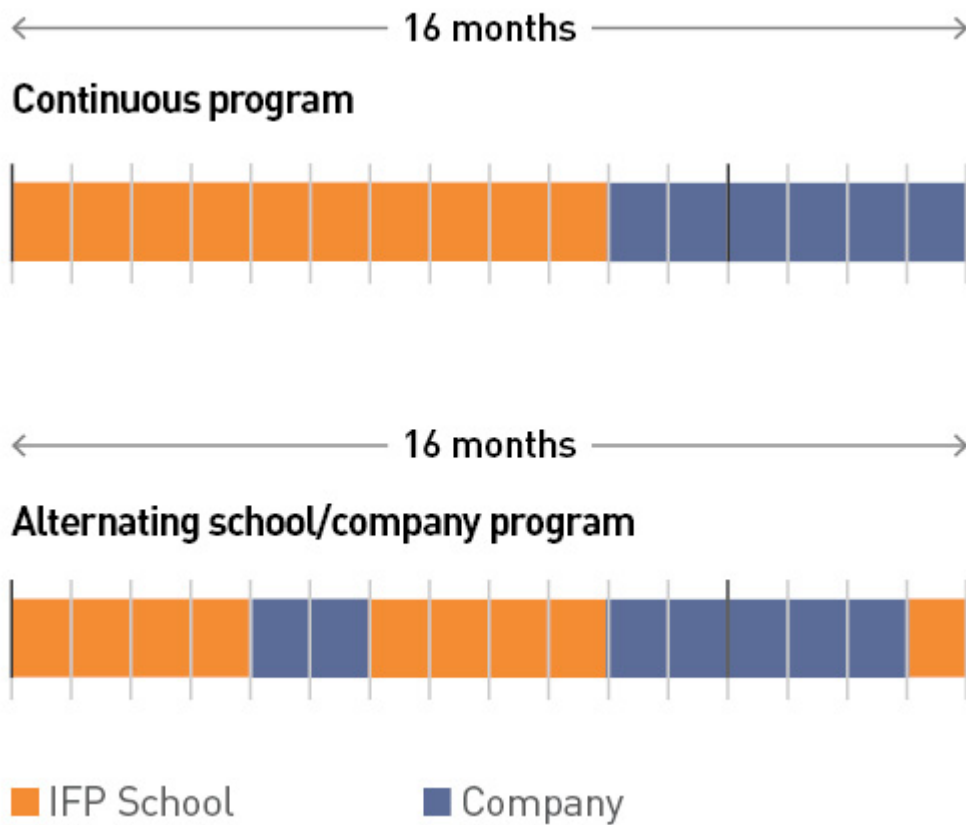
The program is divided into major themes:

- // Separation processes
- // Refining and gas processes
- // Energy and utility management, fluid transport and heat transfer equipment
- // Main petrochemical intermediates and monomers
- // Chemical reactor technologies design and operation
- // Engineering in petrochemical processes
- // Polymer chemistry and polymerization reaction engineering
- // Commodity plastics chain value and manufacturing processes
- // Main engineering and high performance plastics
- // Risk management and process safety
- // Overview of polymer processing
- // Sustainable development and energy efficiency in petrochemicals
- // Elective course: petrochemicals economics or production planning and supply chain
- // Experience Sharing Module

## Planning

The two examples of schedules shown below correspond to the most frequently encountered cases for students in this program:

- // 16-month continuous program for students with a 4- or 5-year engineering degree
- // alternating school/company 16-month program for students with a 5-year engineering degree



There are other possible cases, such as:

- / a 22-month alternating school/company program for students in their penultimate year of a major European school or university having signed a double-degree agreement with IFP School

## OPPORTUNITÉS DE CARRIÈRES

### Businesses

- Process development
- Product development
- Project engineering
- Energy optimization
- Operations and HSE management
- Logistics and sales

## Jobs

- Production engineer in petrochemical complexes:** assists the operational manager, ensures day-to-day technical management of the unit, and is the liaison with development, research, logistics and other departments.
- Process development engineer:** ensures a process technology watch and anticipates future needs ensuing from technological and regulatory changes, helps plants and contributes to experience sharing between sites, participates in R&D programs by providing process skills, and maintains contacts with the company's various entities.
- Process engineer (in a large engineering firm):** sizes petrochemical, polymer and refining units (equipment, instrumentation and piping), simulates and optimizes operation of the units using a number of industry-specific software programs, and participates in various project reviews (HAZOP, etc.) and unit startups.
- Process engineer (engineering department in a petrochemical complex, a refinery and an R&D center):** monitors one or more complex units, and in conjunction with the operator, participates in technical monitoring, in operations optimization and in investment projects to improve operation, safety and security.
- Product development engineer:** ensures a product technology watch and anticipates future needs by maintaining a customer focus, conducts assistance assignments on customer premises, participates in R&D programs by providing product skills, and maintains contacts with the plant's various entities.



**Product manager (in plastics processing):** participates in the drafting of the specifications for manufacturing new products and searches for materials and conversion technologies likely to meet specifications from an economic standpoint.

## FINANCEMENT & SPONSORING

### Typical class profile

Students in this program are almost all sponsored by companies (through sponsorships or apprenticeships) that finance their living expenses during the academic period and contribute towards their tuition.

### Main sponsors

Among these companies, the following have been IFP School partners in recent years (non-exhaustive list):



Arkema



Axens



ExxonMobil



IFPEN



Michelin



Prosernat



Siam Cement Group



S-Oil



Technip



Total