POWERTRAIN ENGINEERING

APPLIED GRADUATE STUDIES

Embracing international professions to meet the technological challenges of tomorrow

Language: English
Duration: 16 months
Degree: Engineering degree / Master's degree

"Continuous" or "alternating school / company" program

The coming decades will be marked by an unprecedented increase in mobility and transport demand.

This new market demand is coupled with unavoidable requirements such as respect for the environment (local and global pollution, noise pollution, safety) and an efficient use of energy resources.

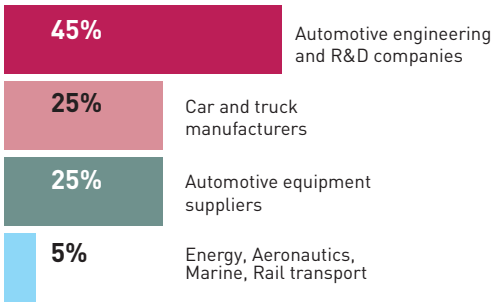
Facing these new challenges, powertrains are of key importance. Current technologies must develop rapidly and new technological breakthroughs are occuring all the time. New opportunities and future prospects are therefore open to powertrain designers.

The IFP School Powertrain Engineering program provides technical, cultural and international training enabling you to be operational in all automotive industry fields related to powertrain development and integration.
The program content is decided with industrial partners and classes are taught by professionals so that the specific technical and methodological features of these professions can be appropriately conveyed. Working methods and rhythms are based on those used in industry and meet the requirements of training programs for professionals, enabling you to be operational upon leaving the School.

The English-language Powertrain Engineering program is a meeting place for young students from many countries who aspire to become specialists in the study, design and implementation of the entire drive train and its main components. Increasingly complex working tools and methods, constantly tighter development deadlines and heightened quality requirements all bring about a strong need for international cooperation between the various industrial fields concerned (engine and powertrain manufacturers, electronics companies, component manufacturers, materials and energy suppliers, research laboratories, etc.).

Against this backdrop, this unique graduate program, giving you both cutting-edge technical skills and an overview of powertrain development, provides the best assets to make you engineers at the core of international cooperation, much sought after by industrial players in these various sectors.

JOB OPPORTUNITIES



Find out more: www.ifp-school.com

POWERTRAIN ENGINEERING

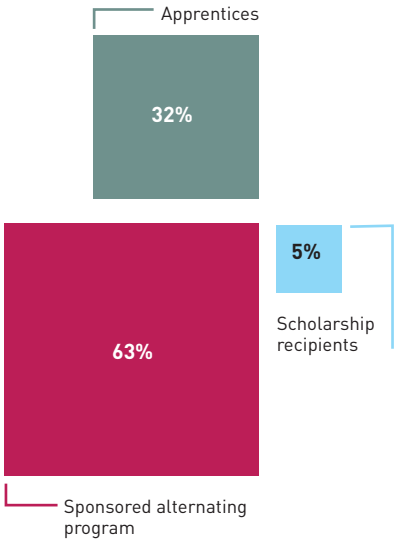
APPLIED GRADUATE STUDIES

TYPICAL CLASS PROFILE / MAIN SPONSORS

Students in this program (around 25) are almost all sponsored by companies (through sponsorships or apprenticeships) which finance their living expenses during the academic period and contribute towards their tuition.

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

- **Car and truck manufacturers:** Ford, John Deere, PCM, PSA Peugeot Citroën, Peugeot Motorcycles, Renault, Renault F1, Renault Sport, Renault Trucks, Volvo Powertrain, etc.
- **Automotive engineering and R&D companies:** AVL, D2T, FEV, IAV, IFP, Le Moteur Moderne, Ricardo, etc.
- **Automotive equipment supplier:** Bosch, Continental, Delphi, Faurecia, Honeywell, Mubea, Valeo, etc.
- **Others (energy, aeronautics, rail transport, marine, etc.):** GDF Suez, SMA, Snecma, etc.



PROGRAM CONTENT

This program is divided into

5 major themes:

Internal combustion engine fundamentals:

- Engine performances and operating parameters
- Engine design and technologies
- Thermodynamics, energy conversion and modeling
- Conventional and advanced combustions

Automotive drive trains:

- Automotive transmissions technology
- Energy storage systems, electric traction
- Micro to full hybrid drive trains
- Engine-drive train matching

Powertrain management:

- Powertrain control
- Calibration and test development
- Powertrain integration into the vehicule
- Design and control of a full hybrid powertrain (final project)

Environmental issues and sustainable development:

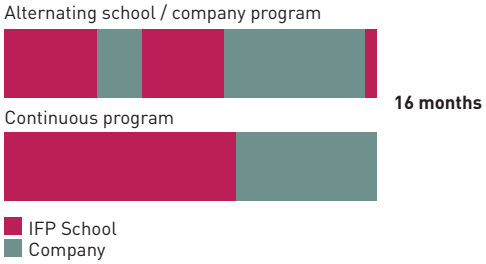
- Worldwide emissions standards
- Pollutant formation and control, after-treatment technologies
- Conventional and alternative fuels
- CO_2 issues, life cycle and well to wheels analysis
- Automotive and energy market

Professional skills development:

- Intercultural skills and intercultural management
- Engineering project management
- Personal development
- Management of inter-company relationship

PROGRAM SCHEDULE

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 as well:

- 10-month continuous program for students with a 5-year engineering degree who have already done work in a company for at least 4 months (validated by the IFP School at admission);
- 22-month alternating school / company program for students in their second to last year of a major European school or university having signed an agreement with IFP School.

Find out more: www.ifp-school.com

Document printed on 100% FSC-certified paper, partially recycled in a printing plant with the *Imprim'Vert* printing label
Esquif Communication - 140906