ENERGY AND POWERTRAINS

APPLIED GRADUATE STUDIES

Language: **French** | Duration: **16 months** | Degree: **Master's degree/Specialized engineering degree**

For sustainable mobility on land, air and sea, every form of transport is impacted by environmental concerns. Energy efficiency of engines is achieved through electrification and hybridization, important subjects addressed in our Energy and Powertrains program, developed in close partnership with companies within the sector to address their need for expertise. This training will transform you into a versatile professional, able to support technological innovations that are critical to the energy transition in the transport sector. Choose a graduate program recognized by key players in the transport field!

HIGHLIGHTS

- Alternating school/ company program
- Highly practical instruction (90% of lecturers come from industry, practical internships, practical training on testing grounds, tours, projects)
- Adaptability and system approach providing access to a large number of industrial sectors and specializations

The world of energy and transport is undergoing tremendous change. Faced with growing demand for mobility and the diversification of transport methods against a background of fierce global competition, tomorrow's professionals face a broad range of challenges. Society's demand for environmental protection and energy efficiency has made automotive engineering an energy transition profession, devoted to the search for innovative solutions that address the challenges of sustainable mobility.

At IFP School, we have designed a program of excellence, offering unique professional and technical training that will prepare you for a career in the world of powertrains used for land, sea and air transport. The Energy and Powertrains program has been developed in close cooperation with our industry partners. It provides practical training in line with the changing marketplace, and offers you the necessary fundamentals, combined with scientific and human agility, to make you a key player in tomorrow's transport industry.

Guided by top professionals, you'll receive training that constantly incorporates the latest technologies and development methods. You'll gain a specific range of skills to cover the main fields and will acquire overall skills across the whole development chain, following an original system approach that is highly valued by the program's industrial partners.

We aim to help you become immediately operational at the end of your training, and maintain versatility throughout your career. Your industry periods, which are an integral part of the program, and the exceptional testing facilities available at IFP School (engine, component and vehicle test benches, modeling tools, etc.) enable you to work under the same conditions as those found in the industry. They also provide the opportunity to gain knowledge and exchange ideas with experienced professionals with a passion for the sector.

The growing complexity of tools and work methods, the ongoing reduction of development lead time and the rising demand for quality mean that there is greater need for multidisciplinary and international cooperation among the various branches of industry. This graduate program will place you at the center of this expanding cooperation, with skills sought after by manufacturers in the industry.

CAREER OPPORTUNITIES

- **Automobile and truck manufacturers**
- **Other manufacturers (aeronautics, marine, off-road, generators, etc.)**
- **Equipment suppliers**
- **Engineering and R&D centers**

Find out more: **www.ifp-school.com**

IFP SCHOOL

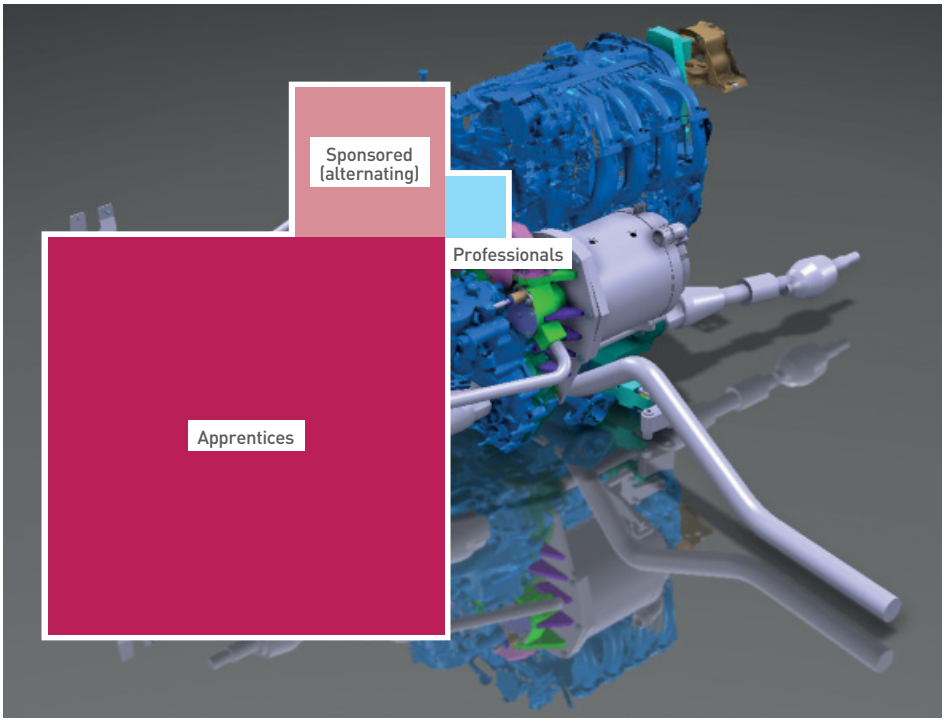
ENERGY AND POWERTRAINS

APPLIED GRADUATE STUDIES

TYPICAL CLASS PROFILE/ MAIN SPONSORS

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

Among these companies, the following have been IFP School partners in recent years (non-exhaustive list):
Airbus Helicopters, Alstom, Bosch, Citroën Sport, Continental, Delphi, D2T, FEV, Groupe PSA, HTI Automobile, IFPEN, Liebherr, Man, Mann Hummel, Marine nationale, Peugeot Scooters, Renault, Renault Sport Cars, Renault Sport Racing, Snecma, Total, Turbomeca, Valeo, Volvo Powertrain.

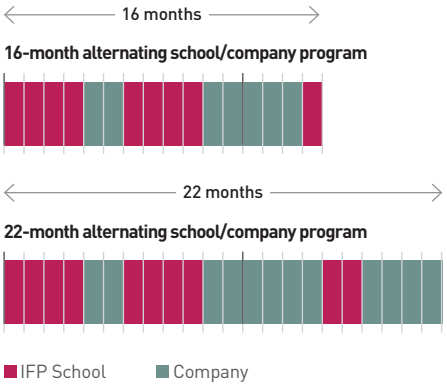


PROGRAM CONTENT

- Introduction to engines
- Energy conversion
- Combustion
- Engine technology
- Air and fuel supply
- Energy, economic and environmental challenges (regulations, pollutant formation, pollutant aftertreatment, lifecycle analysis and CO_2 emissions)
- Innovative engine systems project
- Engine and vehicle testing
- Powertrain control and on-board energy management
- Vehicle integration and energy efficiency - Transmission, electrification, hybridization
- Aircraft engines
- Marine and off-road engines

PROGRAM SCHEDULE

The two examples of schedules shown below correspond to the most frequently encountered cases for students in the program: a 16-month alternating school/company program for students with a 5-year engineering degree, a 22-month alternating school/company for an engineering student in the penultimate year of a major European school or university having signed a double-degree agreement with IFP School.



There are other possible cases, such as a continuous 16-month program for a student with a 4- or 5-year engineering degree.

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