

# Subsurface Technologies for Sustainable Energies\*

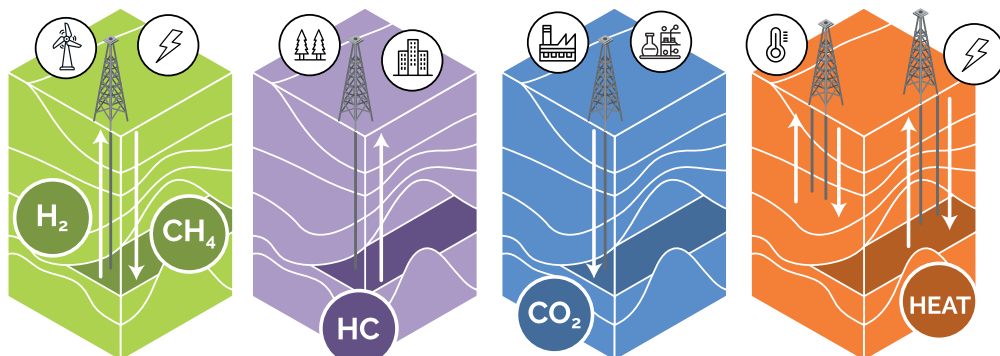
Applied graduate studies

\*Undergoing accreditation



Language:  
English

Duration:  
16 months

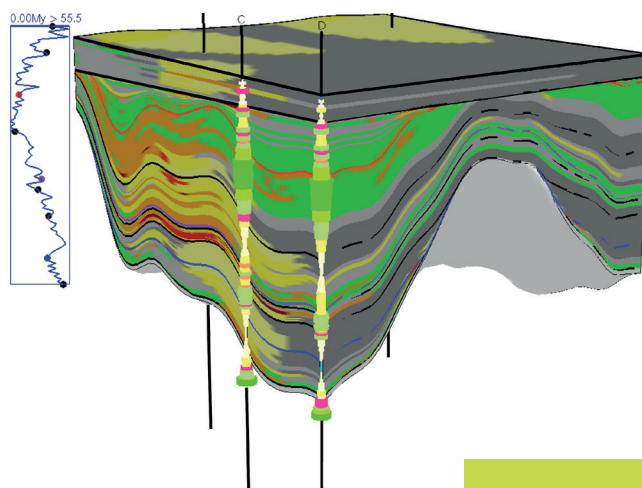


**Want to become a key actor in subsurface management issues and play a significant role in the energy transition? Our program offers a cutting-edge and integrated training in geosciences and reservoir engineering, combining fundamental courses and practice on multidisciplinary industry case studies. You'll be immediately operational upon graduation. A combined training course for a multitude of current and future job prospects: don't wait, join us today!**

## IFP School's Master's degree/ Specialized engineering degree *Diplôme d'ingénieur spécialisé*

The energy world is completely reshaped through the need to meet net zero carbon emissions by 2050 for preventing extreme climate changes. At the same time, the energy demand continues growing to accompany the development of many countries across the planet. In this context, the subsurface has to play a key role to help decarbonizing the energy mix, for example with the development of geothermal energy, geological sequestration of CO<sub>2</sub>, and underground energy storage. Besides such new usages of the subsurface, the exploitation of oil and gas will remain significant in the energy mix for the coming years.

The tools and technology used to characterize, model and monitor the subsurface are essential in any underground project (hydrocarbon exploitation, gas and hydrogen storage, geothermal project, etc.). Hence, the expertise of geoscientists and reservoir engineers are key factors of success. The program enhances your competencies both in geosciences and reservoir engineering, incorporating disciplines that will be necessary to deal with any subsurface project: geomatics, geomechanics, data sciences.



The content consists of a common core, including the necessary concepts and technologies in the various disciplines which are essential to evaluate and develop a subsurface-related project; it is followed by a topic-specific option that focuses on the emerging usages of the subsurface for the energy transition. Each of these options is based on a specific case study from the industry, and being supported by topic-specific courses.

The integrated case study supporting each topic-specific option will allow you to apply the tools learned during the common core such as reservoir characterization, geological modeling, advanced reservoir simulation, production monitoring and optimization. The courses will be supported by practice on case studies using up-to-date software.

## CAREER OPPORTUNITIES

Wide range of international opportunities:

- Exploration geoscientist
- Reservoir geoscientist
- Reservoir engineer
- Reservoir manager
- Geodata scientist

The topic-specific options will be mostly teamwork where you will be an active player of a multidisciplinary team, increasing your know-how in the management of an integrated subsurface project.

IFP School is a cosmopolitan environment with students coming from every continent. We firmly believe that such a cultural blend stimulates student and faculty dynamics.



Find out more: [www.ifp-school.com](http://www.ifp-school.com)



- Customizable academic path with different topic-specific options covering the various usages of the subsurface for energy transition
- Multidisciplinary teamwork on real case studies provided by the industry
- High-tech tools and advanced workflows for exploration and exploitation of georesources
- Lectures by the best professional specialists
- Various field courses.

## Typical class profile/main partners

Students in this program are almost all supported by companies (through a scholarship or an apprenticeship contract, ...) that finance their living expenses during the academic period and contribute towards their tuition.

Partner companies include national and international energy companies, engineering and service companies of the energy sector, consulting companies, international institutions as well as geothermal and underground storage companies.

## Program content

### Common core ~2/3 of the academic cursus

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Introduction to basin studies</li> <li>• Reservoir geology</li> <li>• Static modeling on a case study</li> </ul>  | <ul style="list-style-type: none"> <li>• Reserves estimation</li> <li>• Pressure - Volume - Temperature (PVT)</li> <li>• Well testing</li> <li>• Production mechanisms</li> <li>• Reservoir simulation on a case study</li> </ul> |
| <ul style="list-style-type: none"> <li>• Petrophysics &amp; rock physics</li> <li>• Well logging</li> <li>• Geomechanics</li> <li>• Geostatistics</li> <li>• Data analytics &amp; machine learning</li> <li>• Geographic Information System (GIS)</li> </ul> | <ul style="list-style-type: none"> <li>• Geophysical methods overview</li> <li>• Seismic interpretation</li> <li>• Geophysical monitoring</li> </ul>  |

### Topic-specific options ~ 1/3 of the academic cursus

- One topic to be selected among:
- Regional assessment of subsurface resources
  - Underground gas storage
  - Field monitoring and management
  - Geothermal energy

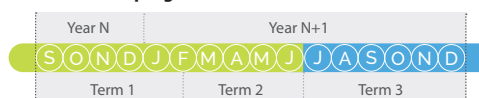


## Program schedule

The two examples of schedules shown below correspond to the most frequently encountered cases:

### 16 months

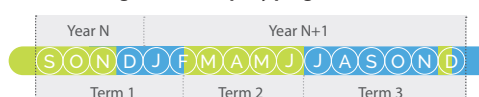
#### Continuous program



- IFP School
- Company

### 16 months

#### Alternating school/company program



Another possible case for students in their penultimate year of a European school or university having signed a double-degree agreement with IFP School:

### 22 months

#### Double-degree



Find out more: [www.ifp-school.com](http://www.ifp-school.com)

CERTIFIED



HappyIndex® A1School  
FRANCE 2024

