



**DTU Civil Engineering**  
Department of Civil Engineering

**DTU Chemistry**  
Department of Chemistry

**DTU Compute**  
Department of Applied Mathematics and Computer Science

**DTU Chemical Engineering**  
Department of Chemical and Biochemical Engineering



# Petroleum Engineering

Master's degree, MSc (2 years)

## Study Environment

### DTU

The Technical University of Denmark (DTU) is the leading technical university in Scandinavia and one of the top technical universities in Europe. It has outstanding facilities for education and research in a large, open campus just north of Copenhagen. All master's courses are taught in English.

### Study Abroad

Students at the Petroleum Engineering MSc programme are encouraged to spend one semester abroad, in order to learn additional subjects and experience a different study environment. The most active student exchange is with Norwegian and Dutch universities.

### Student Life and Networking

The students are involved in activities leading to regular contacts to petroleum companies and, eventually, future employment. The Programme is connected with the Student Chapter of the Society of Petroleum Engineers (SPE), which makes it possible for students to participate in monthly SPE meetings, meet invited engineers and HR, visit industrial facilities, and is promoting contacts between students and their future possible employers.

### Website

[www.dtu.dk/petro](http://www.dtu.dk/petro)  
[www.dtu.dk/uddannelse](http://www.dtu.dk/uddannelse)

### International Applicants: Application Procedure Info

International Affairs  
Phone: +45 4525 1023  
Email: [international@adm.dtu.dk](mailto:international@adm.dtu.dk)  
Office Hours: Monday - Friday  
11 am - 2 pm

### Danish Applicants: Ansøgningsoplysninger

Studievejledningen  
Telefon: 4525 1199  
Email: [studvejl@adm.dtu.dk](mailto:studvejl@adm.dtu.dk)  
Åbningstid: Mandag - fredag 11 - 14

### DTU Kemiteknik

Søtofts Plads  
DTU Building 229  
DK 2800 Kgs. Lyngby  
+45 4525 2813  
[kt@kt.dtu.dk](mailto:kt@kt.dtu.dk)  
[www.kt.dtu.dk](http://www.kt.dtu.dk)



### Academic Programme Information

Programme Coordinator  
Alexander Shapiro  
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LAYOUT: Susanne Fog | PHOTOS: Christian Ole Carlsson og Colourbox | PHOTO: STEFAN



## Master's Programme in Petroleum Engineering

### Why get a master's degree in petroleum engineering?

Hydrocarbons will continue to be the main global energy source for many years to come. However, resources will be less accessible, which means more oil and gas will have to be produced from "difficult" reservoirs: deep- water or arctic-condition reserves, heavy oil, shale reservoirs, gas hydrates. Therefore, more advanced technology will be required to extract them.

The increasing demand in energy and new technological challenges will also require petroleum engineers with different backgrounds: physical, chemical, civil, environmental, and applied mathematics. The Centre for Energy Resources Engineering (CERE) unites researchers and teachers from several departments: Chemistry, Civil Engineering, and Compute - with the core at DTU Chemical and Biochemical Engineering. In this way, you get an MSc programme that includes a number of engineering disciplines.

With the Petroleum Engineering programme you will be trained as a highly qualified engineer for the petroleum industry. The centre has an active research within oil and gas supported by an international industrial Consortium of approximately 30 petroleum and chemical engineering companies. As a graduate you will work in research, production and/or consultancy within a very international industry-petroleum production.



### Programme Structure

The programme follows two overall directions:

1. Geology, Geophysics and Rock mechanics
2. Reservoir Engineering and Process Technology

All students pass a number of mandatory courses. These following courses will provide the basic knowledge that is essential for any petroleum engineer:

- Rock physics and rock mechanics
- Petroleum engineering
- Petrophysics and borehole logging
- Oil and gas production
- Enhanced oil recovery
- Technology and economy of oil and gas production

The mandatory courses comprise 30 ECTS points, one quarter of the programme. The following two quarters are technological specialization and elective courses. A wide range of technological specialization and the elective courses makes it possible for you to form your own petroleum engineering related portfolio of skills and knowledge. The last quarter consists of the master thesis, which is usually written in connection to a large research project at DTU, and/or in collaboration with a petroleum company.

### Prerequisites

#### Who can apply?

The two-year master programme in petroleum engineering may accept students from Bachelor programmes within the areas of physical, chemical, civil, environmental, and applied mathematics.

### Academic requirements

- Minimum 20 ECTS points in mathematics, including differential equations.
- Minimum 20 ECTS points in physics and chemistry. A candidate should have solid skills in several subjects like: Mechanics of liquids and solids, flows, thermodynamics, physical chemistry, mixtures, surface chemistry.

Merits and qualifications of other applicants will be considered individually based on the material submitted. Applicants must have solid skills in thermodynamics, physics, analytical and applied mathematics.

