

## Master of Science in Petroleum Engineering

### Three directions:

- Production engineering
- Drilling engineering
- Reservoir engineering

The first year is common for all three directions. Specialization program commences the third semester (i.e. the second year of the study)

### Courses / plan

#### Common 1<sup>st</sup> year:

1. SEMESTER (autumn, 19 weeks)		2. SEMESTER (spring, 21 weeks)	
Reservoir geology	(5 sp)	Reservoir geology	(5 sp)
Reservoir engineering 1	(5 sp)	Reservoir engineering 1	(5 sp)
Drilling engineering 1	(5 sp)	Drilling engineering 1	(5 sp)
Mathematical modeling 1	(5 sp)	Production engineering 1	(10 sp)
Mathematical statistics 1	(5 sp)	Vibrations and waves	(5 sp)
Well mechanics	(5 sp)		
Sum sp:	30		30

#### Specialization: Drilling Engineering

3. SEMESTER (autumn, 19 weeks)		4. SEMESTER (spring)	
Drilling engineering 2	(10 sp)	Thesis	(30 sp)
Drilling engineering 3	(10 sp)		
Elective course(s)	(10 sp)		
Sum sp:	30		30

#### Specialization: Production Engineering

3. SEMESTER (autumn, 19 weeks)		4. SEMESTER (spring)	
Well analysis 2	(10 sp)	Thesis	(30 sp)
Petroleum processing 2	(10 sp)		
Elective course(s)	(10 sp)		
Sum sp:	30		30

#### Specialization: Reservoir Engineering

3. SEMESTER (autumn, 19 weeks)		4. SEMESTER (spring)	
Reservoir simulation 1	(5 sp)	Thesis	(30 sp)
Well testing	(5 sp)		
Improved oil recovery	(5 sp)		
Advanced well logging	(5 sp)		
Elective course(s)	(10 sp)		
Sum sp:	30		30

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## **Elective courses:**

Topics from all of the Faculty departments can be chosen from the course catalog. The courses elected must be approved by the Department of Petroleum. Recommended courses listed below are all pre approved by the Department of Petroleum.

### **Recommended elective courses in basic disciplines:**

- Mathematical modeling 2
- Linear algebra
- Partial differential equations
- Numerical mathematics
  
- Electromagnetic fields and waves
- Physical chemistry 1
- Analytical mechanics
- Fluid dynamics

### **Recommended elective courses in petroleum and other disciplines:**

- Gas utilization, properties and quality specifications
- Natural gas reservoir thermodynamics
- Reservoir simulation 2
- Fluid flow measurements in the petroleum production
- Water injection during oil and gas production
- Under-balanced drilling
- Performance of oil and gas wells
- Well interventions
- Project management 1
- Engineering methods in petroleum sciences