

DIRECTIONAL AND HORIZONTAL WELLS DRILLING

SUBJECT



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WORKLOAD OF THE SUBJECT

108
hour

7 term

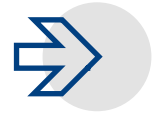
3
credits

exam

- Oil and gas well drilling technology
- Drilling and washing fluids



**LINKS WITH OTHER
SUBJECTS**

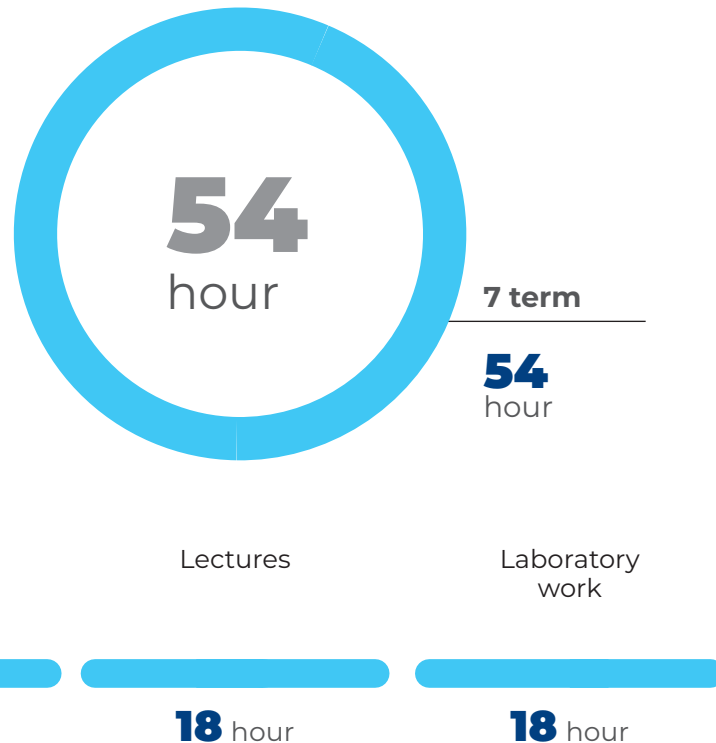


- Complications and accidents when drilling
- Geological and technological research of oil and gas wells



WORKLOAD

CLASSROOM WORK





GOALS

- To get the ability to implement and adjust technological processes in the:
 - construction of directional and horizontal wells
 - overhaul and operation of wells for various purposes and different geometries, on land and in the sea



TASKS

- To study the main physical and mathematical methods of describing technological processes in conducting directional and horizontal wells and changes in state
- To get the ability to calculate the parameters of the well profile, to implement and adjust the technological processes of directional drilling
- To master the experience of adjusting the intensity of curvature from the actual drilling parameters



LECTURES

7 TERM

- General information about the curvature and directional drilling of wells in the Russian Federation and in the world

- Causes and mechanism of natural curvature of wells

- Types of well profiles and methods of their calculation

- Drilling vertical wells

- Design methods and technology for drilling directional wells

- Drilling horizontal wells

- Methods of drilling side barrels

- Drilling of cluster wells

- The composition of BHA directional drilling



PRACTICAL CLASSES

7 TERM

- Calculation of radii and set of curvature for different mechanisms of trunk curvature
- Calculation of permissible radius of curvature of barrels for different technical means and profiles
- Classification of deposit types and forms of planar and spatial tolerances
- Limit sets of curvature of large, medium and small radii
- Elements and layouts of the bottom of the drill string
- Types of support-calibrating and deflecting devices and rock-breaking tools
- Requirements for drilling fluids when drilling directional and horizontal wells



LABORATORY WORK

7 TERM

- Development of drilling mud formulation for drilling and completion of directional and horizontal wells
- Basics of designing the profile of directional and horizontal wells
- Technical means for drilling directional and horizontal wells
- Technical and technological features of drilling horizontal and multi-hole wells
- The current state of technology of drilling of directional, horizontal and multilateral wells



EQUIPMENT AND LABORATORIES





EQUIPMENT AND LABORATORIES

