

# DRILLING EQUIPMENT

SUBJECT



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## WORKLOAD OF THE SUBJECT

144  
hour

4 term

4  
credits

exam

- Oil field Geology
- Geology and lithology



**LINKS WITH OTHER  
SUBJECTS**



- Drilling fluids
- Development of oil and gas fields



## WORKLOAD

### CLASSROOM WORK



Practical  
classes

**24** hour

Lectures

**24** hour

Laboratory  
work

**16** hour





## GOAL

Obtaining the ability to perform technical control of conditions and performance of drilling equipment and the storage conditions of materials on the drilling site



## TASKS

- To study maintenance, operation and storage of conditions of technological equipment and materials used in drilling wells
- To study the rules of safe storage of drilling equipment and materials
- To get the ability to read technical documentation, analyze data on the operation of technological equipment and evaluate the performance of drilling equipment and materials
- To acquire skills for regular inspection of drilling equipment and storage conditions of materials on the drilling site
- To acquire skills for identifying and fixing the facts of improper storage of drilling equipment and materials on the drilling site



# LECTURES

**5** TERM



- Block diagram of the drilling machine
- Mud pumps
- Rigs, masts and buildings
- Pulley-block system
- Special purpose drilling rigs
- Downhole machines and mechanisms
- Equipment for preparation of washing liquids and cement mortars
- Equipment for cleaning drilling fluids from sand and sludge



## PRACTICAL CLASSES

**5** TERM



- Classification of drilling methods
- Methods of rocks destruction when drilling
- Promising methods of rocks destruction when drilling
- Evaluation of drilling efficiency
- Diamond rock-breaking tools and drilling technology
- Diamond drilling using a dual-core pipes
- Drilling rigs and pumps
- Rigs and masts
- Pulley-block system
- Calculation of flushing (purging) of wells and selection of the drilling pump
- Purpose and modern designs of casing and column pipes
- Optimization of the drill string operation
- Calculating the durability of the casing
- Percussion drilling and its varieties
- Slow-rotation and combined drilling
- Drilling method of implementing the tool
- Vibration and auger drilling
- Baring, development and testing of reservoirs
- Composition of a complex drilling rig



## LABORATORY WORK

**5** TERM

- Rigs and masts
- Selection of drilling equipment
- Getting drilling skills when working on simulators
- Drilling flushing fluids
- Geological and technological outfit
- Calculation of the drilling string
- Well profile calculation





## EQUIPMENT AND LABORATORIES





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