

DEVELOPMENT OF OIL AND GAS FIELDS

SUBJECT



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WORKLOAD OF THE SUBJECT

5 term
99

exam

5 term
2,75

6 term
108

credit

6 term
3



7 term
81

exam

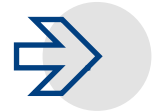


7 term
2,25

- Underground hydro-mechanics of hydrocarbons
- Physical and mathematical foundations of oilfield seismic exploration



**LINKS WITH OTHER
SUBJECTS**

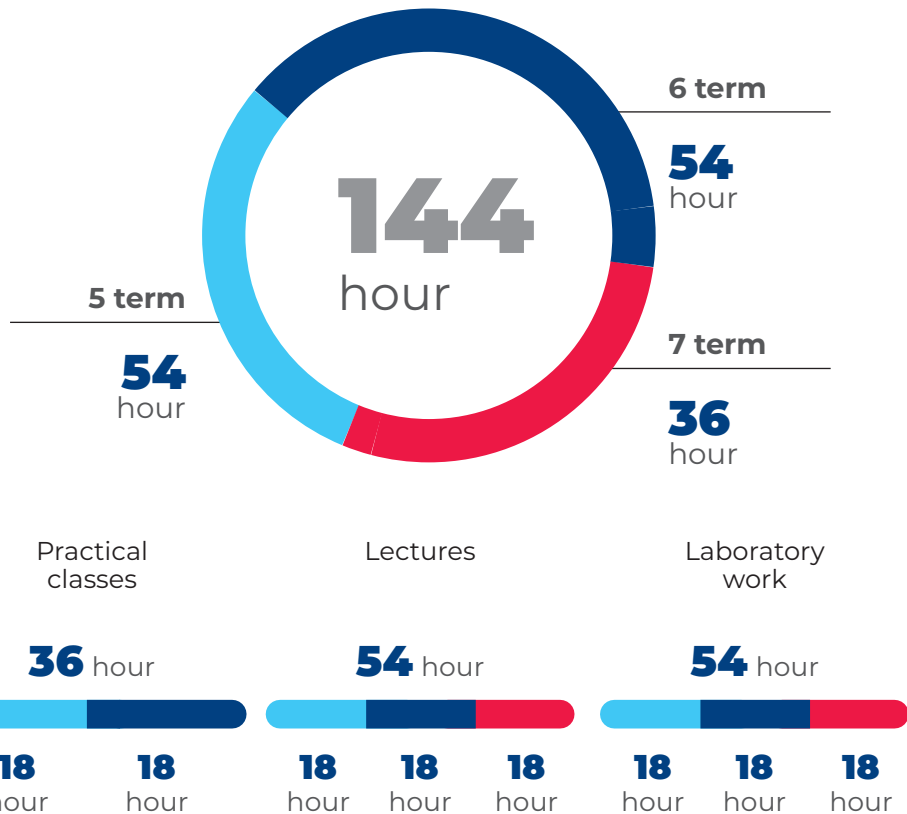


- Computer methods for modeling hydrocarbon deposits
- Design, analysis of development and development of hydrocarbon fields

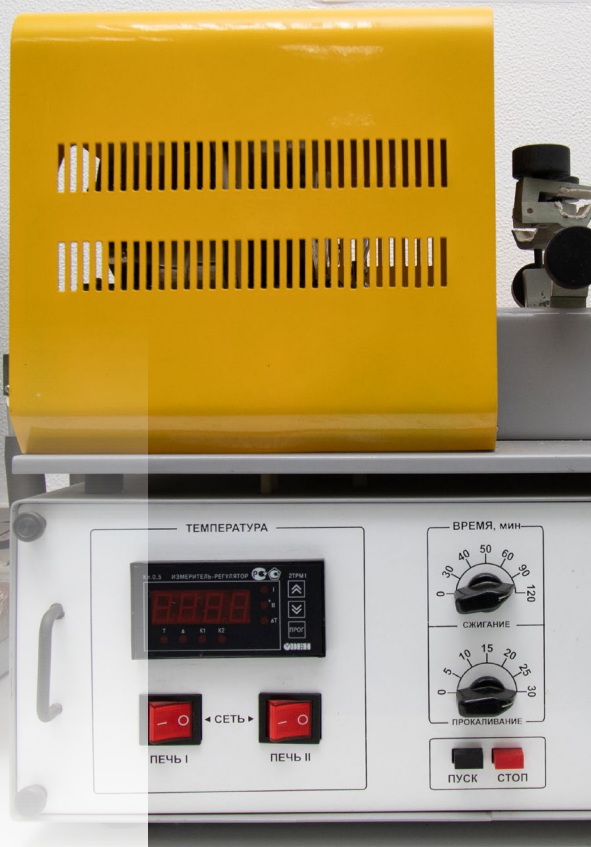


WORKLOAD

CLASSROOM WORK



содержания серы в
нефти



GOALS

Providing theoretical and practical knowledge on development of oil and gas fields



TASKS

- To study the basics of production processes in the operation and maintenance of oil production facilities
- To develop methods and technologies for the rational system of the development and use of natural resources
- To develop methods of forming and regulating the operating modes of oil and gas development and production facilities
- To use a set of geological, industrial and technological information to analyze the current state and determine the prospects for further development of operational objects
- To get knowledge on methods and methods of control, regulation and formation of a rational system of development and use of natural resources



5 TERM

LECTURES

6 TERM

- The process of developing fields. Reserves and resources of hydrocarbon fields
 - Indicators of development of oil and gas fields. Operating modes of oil and gas reservoirs
 - Systems and technologies for developing fields
 - Development of deposits in natural modes
 - Development of deposits with the use of flooding
 - Hydrodynamic calculations for circuit and in-circuit development systems
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- Influence of geological and physical factors on development efficiency
 - Forecast the effectiveness of the development model and the characteristics of the displacement
 - Regulation by technological methods, cyclic impact on the reservoir and the direction of change of filtration flows



7 TERM

LECTURES

- Guidance documents for the preparation of project documents for the development of oil fields.
- Geological and physical characteristics of productive layers.
- Features of construction of geological and hydrodynamic models of productive layers with different study of deposits and for different monitoring purposes
- The state of development of the field
- Field development design
- Methods of increasing oil recovery and intensification of oil production
- Technical and economic analysis of development options



5 TERM

PRACTICAL CLASSES

6 TERM

- Setting into operation the field under the trial operation project
 - Study of heterogeneity of layers by geological and lithological profiles
 - Modes of field development
 - Determining the impact of development rate and input speed on development indicators
 - Construction of maps of current selections taking into account flood systems
-
- Determination of oil production, pressure and oil flow rates in a flood control system
 - Estimation of technological efficiency of the field by displacement characteristic
 - Determination of oil pressure and flow rates in an intra-circuit flooding system
 - Construction of displacement characteristics for a given reservoir and determination of the efficiency of field development
 - Forecast of efficiency of oil recovery coefficient using statistical models



5 TERM

LABORATORY WORK

6 TERM

7 TERM

- The allocation of objects of working out fields
 - Construction of the schedule of development of fields; allocation of stages of development
 - Determination of flood systems based on current selection maps
 - Primary processing of field data
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- Determination of final oil recovery by the rate of production decline
 - Estimation of the distribution of residual reserves by the area of the field
 - Calculations of the main indicators of development on the characteristic of displacement for the long-term period
-
- Introduction of RN-KIN software package (complex of tools for oil engineering / « Reservoir Engineering System Tools (RN-REST)
 - Geological and technological events. Transfer to the overlying horizon in the RN KIN program
 - Operational assessment of technological efficiency of new wells introduction



EQUIPMENT AND LABORATORIES





EQUIPMENT AND LABORATORIES

