

OPERATION OF GAS PIPELINES AND GAS DISTRIBUTION SYSTEMS

SUBJECT



**SAMARA
POLYTECH**
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WORKLOAD OF THE SUBJECT

6 term
108

exam

6 term
3



180
hour

7 term
72

credit



5
credits

7 term
2

- Compressors and compressor stations
- Turbine unit



LINKS WITH OTHER SUBJECTS

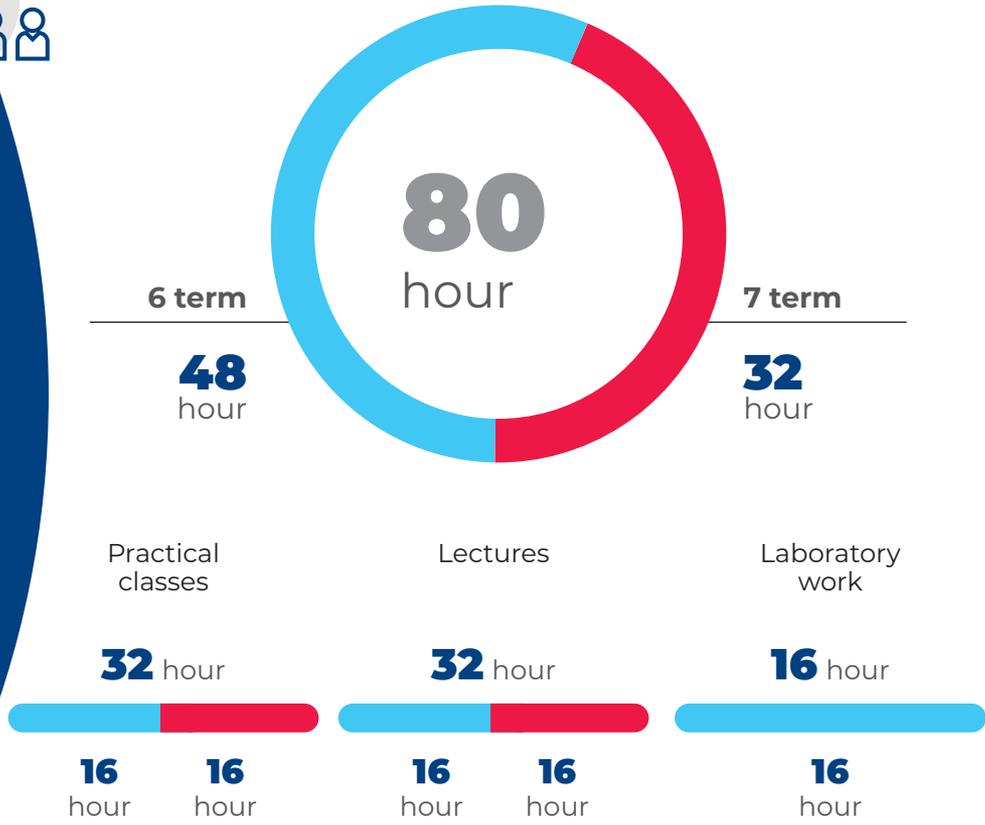


- Diagnostics of oil and gas transportation and storage facilities
- Safety operation of oil and gas transportation and storage facilities



WORKLOAD

CLASSROOM WORK





GOALS

- To study the composition, devices, purpose and classification of principle operations of gas networks and facilities
- To get necessary knowledge of using modern methods for monitoring the condition of systems, repair and maintenance



TASKS

- to give students an idea of large gas fields,
- to explain the rules of gas distribution systems' operation as well as the equipment regulation and adjustment



6 TERM

LECTURES

7 TERM

- General issues on gas pipeline transport
- Capacity of gas pipelines
- Pressure and temperature changes along the length of the pipeline section
- Relief gas pipelines
- Complex gas pipelines
- Complex multi-flow gas pipelines
- Long gas pipelines
- Joint work of gas pipelines and the communication centre

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- Main gas pipeline
 - Maintenance service
 - Maintenance of gas pipelines. Emergency stock. Technical documentation
 - Safety requirements in the operation of the line section of the main gas pipeline
 - Gas distribution network
 - Schemes of gas distribution stations
 - Structural components of gas distribution stations



6 TERM

PRACTICAL CLASSES

7 TERM

- Capacity of gas pipelines
 - Coefficient of hydraulic resistance
 - Pressure distribution along the length of the pipeline
 - Temperature distribution along the length of the gas pipeline
 - Complex gas pipelines
 - Complex gas pipelines with loops and jumpers
 - Complex gas pipelines of various schemes with discharges and pumping
 - Influence of the route relief on the gas pipeline capacity
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- Operation of the main gas pipeline
 - Hydrate formation
 - Technological calculation of the main gas pipeline
 - The treatment unit
 - The metering unit
 - Reduction unit
 - Heating unit



LABORATORY WORK

6 TERM



- Control of single-line gas pipeline operation modes during gas transit
- Management of modes of operation of the main gas pipeline
- Joint operation of gas pipeline and compressor station
- Performance and calculation of complex gas pipeline
- Performance regulation of the main gas pipeline at gas extraction to consumers through a gas distribution station
- Calculation of gas pipeline with discharges and pumping



EQUIPMENT AND LABORATORIES





EQUIPMENT AND LABORATORIES



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