

## OILFIELD CHEMISTRY.

Development paths and application of oilfield chemistry for production, treatment, transportation of oil and enhanced oil recovery

The Program “Production and treatment. Enhanced oil recovery methods. General questions”

№	Name of study units and subjects of the Program “ <b>Production and treatment. Enhanced oil recovery methods. General questions</b> ”	Total hours	Including		
			lectures	Practical sessions	Lab practicum
<b>1.</b>	<b>World oil-and-gas resources.</b>	<b>2</b>	<b>2</b>		
1.1	Importance of hydrocarbon resources. Fuel and energy balance of Russia and the World. Conventional and unconventional hydrocarbon resources. Offshore oil and gas resources.	2	2		
<b>2.</b>	<b>Oil field treatment</b>	<b>18</b>	<b>18</b>		
2.1	Mechanisms of oil-water emulsions building. Formation of interlayer oil-water emulsions.	2	2		
2.2	Mechanisms of oil-water emulsion destruction and demulsifying reagents.	2	2		
2.3	Theoretical framework for application of surfactants in oilfield experience.	2	2		
2.4	Oil production problems: paraffin deposits, scale buildup. Methods to remove and prevent.	2	2		
2.5	Types of oilfield equipment corrosion and means of its minimizing.	2	2		
2.6	Oil field bacterial flora. Negative consequences of the sulfur reducing bacterial activity and methods to control them.	2	2		
2.7	Oil and gas hydrogen sulfide stripping. Hydrogen sulfide and oxygen scavengers.	2	2		
2.8	Stimulation technique for operating procedure of oil and gas treatment.	2	2		
2.9	Metrological assurance for crude oil and oil products quantity and quality control systems.	2	2		
<b>3</b>	<b>Modern methods of oil and gas production stimulation.</b>	<b>12</b>	<b>6</b>		
3.1	Classification of enhanced oil recovery methods. Operating procedures for enhanced oil recovery methods	2	2		
3.2	Surfactants used in operating procedures for enhanced oil recovery.	2	2		

3.3	Thermal methods, microbiological methods for enhanced oil recovery.	2	2		
3.4	Well bottom zone stimulation methods. Water suppression, hydrophobization. Stimulation of oil and gas production by method of formation hydraulic fracturing.	2	2		
3.5	Workover fluid. Cementing slurry. Impact assessment of invert emulsion solutions on filtration properties of reservoirs during well killing operation.	2	2		
3.6	Acid treatment as a means of well performance stimulation.	2	2		
<b>4</b>	<b>Technical regulation in the oil and gas industry at the present stage.</b>	<b>2</b>	<b>2</b>		
<b>5</b>	<b>Economic value of innovation.</b>	<b>2</b>	<b>2</b>		
	<b>In total:</b>	36			