

Study Programme: Industrial engineering in exploitation of oil and gas		
Course Unit Title: Corrosion and corrosion protection facilities for the production of petroleum and gas		
Course Unit Code: OAS271		
Name of Lecturer(s): Assistant Professor Snežana Filip, PhD		
Type and Level of Studies: Bachelor Academic Degree		
Course Status (compulsory/elective): Elective		
Semester (winter/summer): Summer		
Language of instruction: English		
Mode of course unit delivery (face-to-face/distance learning): Face-to-face		
Number of ECTS Allocated: 5		
Prerequisites: None		
Course Aims: Acquisition of basic academic knowledge about the processes of corrosion and corrosion protection facilities for the production of petroleum and gas, as well as understanding mechanisms of corrosion.		
Learning Outcomes: Ability to solve specific, practical engineering problems caused by the effects of corrosion in the petroleum and gas production.		
Syllabus: <i>Theory</i> Physico-chemical properties of crude oil, reservoir water and corrosion. Evaluation of corrosion rate. Corrosion mechanisms. The properties of metals in contact with the fluid, which are used for the production of equipment in oil fields important for corrosion processes. Internal and external corrosion of equipment for oil and gas production. Sulphide and CO ₂ corrosion. Electrochemical and mechanical corrosion. Corrosion in the processes of oil and gas production on: pipelines, wells, pumps, reservoirs, separators ... Extraction of mineral salts. Desalinization of crude oil. Operating parameters of the desalter. Criteria of separation. Measures for corrosion protection. Corrosion inhibitors. Corrosion coupons and overview of the condition of the equipment. Examples. <i>Practice</i> Standard methods for determining corrosivity in the petroleum industry. Corrosion and corrosion protection in crude oil fields.		
Required Reading: 1. V. Chilingar, R. Mourhatch, G. D. Al-Qahtani. The Fundamentals of Corrosion and Scaling for Petroleum and Environmental Engineers. Gulf Publishing Company, 2008. 2. Malcolm A. Kelland. Production Chemical for oil and gas industry. CRC Press. Taylor and Francis Group, 2009.		
Weekly Contact Hours: 4	Lectures: 2	Practical work: 2
Teaching Methods: Teaching is conducted interactively in the form of lectures, which are accompanied by appropriate video presentations, auditory and laboratory exercises. The audit exercise is analyzed characteristic tasks and deepens the mastered material. Laboratory exercises are practically applied to the acquired knowledge on the available equipment.		
Knowledge Assessment (maximum of 100 points):		

Pre-exam obligations	points	Final exam	points
Active class participation	5	oral exam	40
Practical work	30		
Preliminary exam(s)	25		