

Material and technical base of the department "Technological machines, transport and logistics"

Educational programs:

- 1. Operational and service engineering**
- 2. Digital engineering machinery and equipment**

№	Name of equipment (devices), type (brand), manufacturer, factory and inventory number, year of manufacture	Application of equipment (devices) and basic technical characteristics	Application (where and for what time is used)	Location of equipment
1	2	3	4	5
<p>Current instrumentation Training and production workshop (UPM) Head: Maikenov EB Conducting laboratory, experimental-stand work on projects of NIR, performed by the department of Technological machines, transport and logistics, conducting training of students</p>				
1	2	3	4	5
1	Welding machine (manufactured in Germany). Inv.No: 2410-40251. Without the factory number 25.11.2006.	<p>Purpose: welding inverter ARC 200 REAL Z238N 95726 is used for reliable connection of structures and metal products by MMA method.</p> <p>Technical characteristics:</p> <ul style="list-style-type: none"> - Voltage of the single circuit 85 V, - Maximum welding current 190 A, - Minimum welding current 10 A, - Working cycle at maximum current,% 70%, - Max. welding current at 100% cycle 120 A 	<p>Applied for: for the production of details and parts of layouts. Used for the implementation of R&D on the topics of the department and for the conduct of practical and laboratory work of students.</p>	<p>TTK, UPM, 26</p>
2	High-speed dynamic solid-state meter (manufactured in Russia).	<p>Purpose: Dynamic solid meter is intended for measuring the hardness of structural, carbon steels and non-ferrous steels</p>	<p>Applied for: Used in the determination of the solidity of structural materials,</p>	<p>TTK, UPM, 26</p>

	<p>Inv.№: 2410-7439. Without the factory number 27.12.2011.</p>	<p>and alloys of non-ferrous metals on the scale of Rockwell (HRC), Brinella (HB), Vickers (HV). Technical characteristics: - Measurement scales HL, HRC, HRB, HV, HB, HS. - Number of measurement results in memory (archive) 240-1000 data groups (average number of measurements: 32-1), - Range of measurements on the scale of strength limit 374-2652 MPa. - Absolute error of measurements of unit HLD ± 6 (760 ± 30 HLD), measurement error of unit result, unit HLD 6 (760 ± 30 HLD) repeatability of measured result</p>	<p>without destroying their structure and integrity. For the determination of solid-state characteristic metals, as well as blanks from polymer-concrete and fibro-concrete mixtures, from which the body of gearboxes and centrifugal pumps are made under the project "Modernization of mining and metallurgical equipment and equipment"</p>	
3	<p>Hydraulic press, VM4.3 (manufactured in Italy) Inv.№: 2410-40302. factory number: T15315001. 27.07.2005</p>	<p>Purpose: the press is intended for static tests of standard specimens on compression, on transverse curvature. Technical characteristics: - Range - from 10 to 1250 kN, - The price of the youngest grade -0.1 kN, - Defects $\pm 1\%$, - Maximum-minimum brightness 250 mm.-70mm, - Plate size -200x200 mm, - Screw screw 180 mm, - Piston stroke -15 mm, - Power supply from 220 V, 50 Hz, - Consumed. Power 1 kW, - Speed of loading is regulated within limits - 2-10 kN / s, - Dimensions: 340x440x850 mm, Mass - 240 kg.</p>	<p>Applied for: In the study of the definition of mechanical properties of innovative materials in the modernization of mining and metallurgical equipment, in particular in the experiments on bending and breakage, as well as the determination of the percentage of binding components that break down the pattern.</p>	TTK, UPM, 26
4	<p>PBF / 16 contact welding unit (German production). Inv.№: 2410-40318. Without factory number 21.09.2005.</p>	<p>Purpose: Contact welding is used for joining the smallest details (up to 0.02 μm) of electronic devices, for welding steel structures from sheets of thickness up to 3 mm in machine building and other industries. Technical characteristics: - Height 1580 mm,</p>	<p>Applied for: This welding machine contact point welding is used in the manufacture of various constructions, parts and housings for pouring polymer concrete and fiber concrete mixes for</p>	TTK, UPM 26

		<ul style="list-style-type: none"> - Length 560 mm, - Width 920 mm, Weight 165 kg, - Power supply voltage 380 V, - Type of welding stationary Stationary. 	<p>the project "Modernization of mining and metallurgical equipment and equipment."</p> <p>Used for spot contact welding of sheet steel without hermetic seams. It is also used in educational purposes, in the performance of practical and laboratory work.</p>	
5	<p>Surface centrifugal pump GP1000X (manufactured in Taiwan).</p> <p>Inv.No: 2410-54650. factory number: 01300400343 02.07.2018.</p>	<p><u>Purpose:</u> intended for distribution of clean water under pressure up to 4.4 bar from wells, storage tanks, natural water bodies, etc.</p> <p><u>Technical characteristics:</u></p> <ul style="list-style-type: none"> - Max. productivity - 3500 l / h, - Max. working pressure - 4.4 bar - Suction height - 8 m, - Max. particle size - 5 mm - Max. t of fluid - 35 ° C 	<p><u>Applied for:</u></p> <p>Used for the purpose of creating a liquid pressure nozzle to study the characteristic jet pump. Used as part of the stand for the extraction of active media with the purpose of capture (passions) of the passive environment for research and development of techniques and technologies for pumping productive solutions during underground drilling.</p>	ТТК, УПМ 26
6	<p>Ultrasonic thickness indicator "Vzlet UT" (manufactured in Russia).</p> <p>Inv.No: 2410-7509. factory number: 11C3333 30.12.2011</p>	<p><u>Purpose:</u> for measuring the thickness of products and objects from different materials, measuring the speed of distribution of ultrasound in the material with the known value of thickness.</p> <p><u>Technical characteristics:</u></p> <ul style="list-style-type: none"> - Range of measured ultrasound speed, m / cell 1000 to 15000, - Measurement error,%: - thickness $\pm (0.035 + 0.001 \times h)$ *, - ultrasound speed in the range of thicknesses from 20 to 300 mm,% ± 0.5, 	<p><u>Applied for:</u></p> <p>for accurate measurement of the wall thickness of gearboxes and centrifugal pumps made of polymer concrete and fiber-reinforced concrete mixtures, as well as for determining the thickness of samples for mechanical tests under the project "Modernization of mining and metallurgical equipment using innovative materials and drive layouts" is used to determine the thickness of the product.</p>	ТТК, УПМ, 26

		- Resolution: - when measuring thickness, 0.01mm, - when measuring ultrasound speed, 1m / s.	In addition to the above, it is also used for educational purposes, to perform practical and laboratory work in the specialty 6B07107.	
7	Muffle furnace MP-2U. Inv.No .: 2410-14221 Without serial number 03.01.2013.	<u>Purpose:</u> Designed for heat treatment of metals, ceramics, reagents and other materials. <u>Technical characteristics:</u> - Power: 3.5 kW - Temperature range: 150 ÷ 1250 ° C - Dimensions of the working chamber, mm: - width - 190 - length - 380 - height - 120	<u>Applied for:</u> Due to the high thermal conductivity of the muffle, uniform heating of the internal volume of the furnace is ensured. According to scientific projects, the department is used for drying samples and electrodes. And also used in the educational process for demonstration, when performing practical and laboratory work in the specialty 6B07107	TTK, UPM, 26
Current instrumentation of the Laboratory "Machine Operation and Automation of Industrial Complexes". Head: M.K. Myrzakulov				
Researching the properties of petroleum products and oils in order to improve their quality.				
1	2	3	4	5
8	Thermostat VIS-T-08-3 (including: backlight lamp; vertical indicator; tripod for VIS-T-Sh4 viscometers; PMS coolant; viscometer type VPZH).	<u>Purpose:</u> designed to maintain temperature when determining the kinematic viscosity of oil products and other liquids using glass viscometers <u>Technical characteristics:</u>	<u>Applied for:</u> To carry out research and development work on the project "Creation of a new technology for collecting high-viscosity oil in barns and bottling sites using ultrasonic devices" is used to determine the	GMK, 138

	<p>Inv.No .: 2410-56986 head # - B / N 04.12.2018</p>	<p>- The range of reproducible temperatures TPP -1.0 ... from 35 to .300 ° C, TPP-1.1 ... from -40 to + 100 ° C. TPP-1.2 ... from -60 to +100 ° C. CCI 1-: 1.3 ... from -75 to 4-100 ° C</p>	<p>viscosity of oil products at different temperatures. Teaching equipment for practical and laboratory work of students.</p>	
9	<p>Cryostat. CRIO-VT-ro-03, (including cylinder VT-ro-TsS; hydrometer type ANT; thermometer type TL).</p> <p>Inv. 2410-56987 head # B / N 04.12.2018.</p>	<p><u>Purpose:</u> to maintain the set temperature of the heat-transfer fluid circulating in the internal bath of the cryostat and in the connected external consumers.</p> <p><u>Technical characteristics:</u> Measuring range of SI: depending on modification, range. regulation temp .. from +100 .. + 300, -30 .. + 100. -80 ... + 30 C. Thermostat exit time from temp .: - min. 1.0; 1.5; 3.0 h; - Maxim. 2.5; 1.5; 1 0.5 h</p>	<p><u>Applied for:</u> To carry out research and development work on the project "Creation of a new technology for collecting high-viscosity oil in barns and bottling sites using ultrasonic devices" is used to determine the density of oil products at different temperatures. Teaching equipment for practical and laboratory work of students.</p>	GMK, 138
10	<p>Hydrometer AN (JSC "Steklopribor" Ukraine)</p> <p>Inventory number 016 Serial number 556 04.12.2018.</p>	<p><u>Purpose:</u> for measuring the density of oil and petroleum products such as oils, gasoline, diesel fuel.</p> <p><u>Technical characteristics:</u> - Measurement range: from 700 kg / m3 to 760 kg / m3</p>	<p><u>Applied for:</u> for testing during the implementation of research, as well as for practical and laboratory work of students.</p>	GMK, 138
11	<p>Hydrometer AN (JSC "Steklopribor" Ukraine)</p> <p>Inventory number 017 Serial number 450 04.12.2018.</p>	<p><u>Purpose:</u> for measuring the density of oil and petroleum products such as oils, gasoline, diesel fuel.</p> <p><u>Technical characteristics:</u> Measurement range: from 760 kg/m3 to 820 kg/m3</p>	<p><u>Applied for:</u> for testing during the implementation of research, as well as for practical and laboratory work of students.</p>	GMK, 138
12	<p>Hydrometer AN (JSC "Steklopribor" Ukraine)</p>	<p><u>Purpose:</u></p>	<p><u>Applied for:</u></p>	GMK, 138

	Inventory number 018 Serial number № 8752 04.12.2018.	for measuring the density of oil and petroleum products such as oils, gasoline, diesel fuel. <u>Technical characteristics:</u> - Measurement range: from 820 кг/м3 to 880 кг/м3	for testing in the performance of research, as well as for practical and laboratory work of students.	
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