

Bachelor Program: Metallurgy
Study Program: Pressure Treatment of Metals

Duration: 4 years

Language of Training: Russian

№	Subject	Semester	Hours	Credits
B.1.1	Basic part			
B.1.1.1	History	1	108	3
B.1.1.2	Philosophy	5	108	3
B.1.1.3	Foreign Language			
B.1.1.3	Foreign Language	1	108	3
B.1.1.3	Foreign Language	2	108	3
B.1.1.3	Foreign Language	3	72	2
B.1.1.4	Basics of economic theory	3	108	3
B.1.1.5	The economics of the industry	6	108	3
B.1.1.6	Production management	5	108	3
B.1.1.7	Mathematics			
B.1.1.7	Mathematics	1	144	4
B.1.1.7	Mathematics	2	144	4
B.1.1.7	Mathematics	3	180	5
B.1.1.8	Informatics	1	144	4
B.1.1.9	Physics			
B.1.1.9	Physics	2	144	4
B.1.1.9	Physics	3	144	4
B.1.1.10	Chemistry			
B.1.1.10	Chemistry	1	108	3
B.1.1.10	Chemistry	2	108	3
B.1.1.11	Physical Chemistry	2	72	2
B.1.1.12	Thermophysics	7	72	2
B.1.1.13	Ecology	3	72	2
B.1.1.14	Engineering Graphics (Drawing)	1	72	2
B.1.1.15	Descriptive geometry and computer graphics			

B.1.1.15	Descriptive geometry and computer graphics	2	108	3
B.1.1.15	Descriptive geometry and computer graphics	3	72	2
B.1.1.16	Material Resistance	3	144	4
B.1.1.17	Machine parts	4	144	4
B.1.1.18	Electrical engineering and electronics			
B.1.1.18	Electrical engineering and electronics	3	144	4
B.1.1.18	Electrical engineering and electronics	4	144	4
B.1.1.19	Metrology, standardization and certification	4	144	4
B.1.1.20	Life safety	4	144	4
B.1.1.21	Metallurgical Heat Engineering	7	108	3
B.1.1.22	Metallurgical Technologies	2	144	4
B.1.1.23	Material Science			
B.1.1.23	Material Science	1	144	4
B.1.1.23	Material Science	2	144	4
B.1.1.24	Physical Culture	1	72	2
B.1.2	Variation part			
B.1.2.1	Legal State: History and Modernity	2	72	2
B.1.2.2	Philosophy of Science and Technology	6	108	3
B.1.2.3	Computer applications	4	144	4
B.1.2.4	Methods of control and analysis of substances	5	72	2
B.1.2.5	Theory of Heat and Mass Transfer	6	108	3
B.1.2.6	Crystallography and solid state physics	5	108	3
B.1.2.7	Corrosion and metal protection	5	108	3
B.1.2.8	Environmental problems of metallurgical production	7	108	3
B.1.2.9	Theory of Metal Pressure Treatment			
B.1.2.9	Theory of Metal Pressure Treatment	5	180	5
B.1.2.9	Theory of Metal Pressure Treatment	6	216	6

B.1.2.10	Simulation of thermal processes in rolling production	8	180	5
B.1.2.11	Technological processes of metal pressure processing	7	216	6
B.1.2.12	Heating equipment for OMD shops	8	144	4
B.1.2.13	Equipment and design of OMD shops			
B.1.2.13	Equipment and design of OMD shops	6	216	6
B.1.2.13	Equipment and design of OMD shops	7	180	5
B.1.2.14	Promising processes in long products production	7	180	5
B.1.2.15	3D modelling and CAD basics	4	72	2
B.1.3	Disciplines of choice			
B.1.3.1.1	Psychology	3	72	2
B.1.3.1.2	Engineering psychology	/3	/72	/2
B.1.3.2.1	History of Russian Culture	1	108	3
B.1.3.2.2	History of Science and Technology	/1	/108	/3
B.1.3.3.1	Modeling of processes and objects in metallurgy	6	144	4
B.1.3.3.2	Information technologies in metallurgical production processes	/6	/144	/4
B.1.3.4.1	Mathematical methods in engineering	4	108	3
B.1.3.4.2	Methods of mathematical physics	/4	/108	/3
B.1.3.5.1	High technology in metallurgy	5	144	4
B.1.3.5.2	Reinforcing technologies in metallurgy	/5	/144	/4
B.1.3.6.1	Pumps, fans, compressors	4	72	2
B.1.3.6.2	Electrical equipment and power supply to rolling mills	/4	/72	/2
B.1.3.7.1	Thermal processing of metal products	5	72	2
B.1.3.7.2	Tube Rolling Technology	/5	/72	/2
B.1.3.8.1	Foreign language for professional communication			
B.1.3.8.1	Foreign language for professional communication	4	72	2
B.1.3.8.1	Foreign language for professional communication	5	108	3
B.1.3.8.2	Technical translation			
B.1.3.8.2	Technical translation	/4	/72	/2

B.1.3.8.2	Technical translation	/5	/108	/3
B.1.3.9.1	Methods of quality control of metal products	6	/72	/2
B.1.3.9.2	Transport systems in OMD shops	/6	/72	/2
B.1.3.10.1	Production technology of long products	7	/144	/4
B.1.3.10.2	Auxiliary equipment for OMD shops	/7	/180	/5
B.1.3.11.1	Computer and microprocessor technology in WMD processes	8	/216	/6
B.1.3.11.2	Basics of automation of WMD technological processes	/8	/180	/5
B.1.3.12.1	Basics of modern design of metallurgical production	8	/72	/2
B.1.3.12.2	Materials of electrothermal installations	/8	/108	/3
B.1.3.13.1	Game sports	2	/144	/4
B.1.3.13.1	Game sports	3	144	4
B.1.3.13.1	Game sports	4	82	0
B.1.3.13.1	Game sports	5	38	0
B.1.3.13.1	Game sports	6	44	0
B.1.3.13.2	Improving physical education	/2	/82	0
B.1.3.13.2	Improving physical education	/3	/82	0
B.1.3.13.2	Improving physical education	/4	/82	0
B.1.3.13.2	Improving physical education	/5	/38	0
B.1.3.13.2	Improving physical education	/6	/44	0
B.2	Practice			
B.2.1	1st Training Practice	2	108	3
B.2.2	2nd Training Practice	4	108	3
B.2.3	Manufacturing Practice	6	108	3
B.2.4	Manufacturing Practice (SRW)	8	108	3
B.2.5	Undergraduate practice	8	216	6
B.3	State final certification (basic part)	8	216	6
F.	Optional subjects			
F.2	Technologies for processing non-ferrous metals and alloys by pressure	5	72	
F.3	Metallurgical tool materials	5	72	

F.4	Methods of control of functional characteristics of metal products	7	72	
	Total		8968	240